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Tax Working Group – Future of Tax Submissions Background Paper – Marginal Effective Tax Rates

Pursuant to your instruction to review the analysis of Marginal Effective Tax Rates (“METRs”) on Savings presented in Figure 21 of the Future of Tax Submissions Background Paper (“TWG Paper”) we present our observations based on our analysis of the framework, methodology and calculations, whilst we also offer various assessments of the METRs based on a more rigorous analytical framework.

It is important to highlight from the outset that the METRs as derived and presented in the TWG Paper are not what are commonly accepted to be marginal effective tax rates. In the TWG Paper, METRs have been defined as the “tax rate on real, pre-tax income for investments that earn the same rate of return.” The calculation is further obfuscated by in effect deeming the reduction in the nominal return due to the inflation component of the nominal return a tax. Ultimately, the framework, methodology and calculations confuse, nominal and real, pre and post-tax and ignore the key drivers underlying savings decisions – risk and prevailing and expected nominal after-tax returns.

We consider the summary presentation of the TWG Paper METRs to be misleading as it does not represent what it purports to. It is not a schedule of METRs but a schedule of the combined marginal Income Tax, Inflation and Local Authority Rates imposts on various asset classes.

Further, the TWG Paper METRs are specific to the nominal interest rate and inflation environment and do not represent an appropriate comparison across asset classes. The asset class comparisons fall short as the METRs are assessed against a fixed real rate of return and other than for Housing/Property only relate to the Bank Deposit component of PIE, Superannuation Fund or Company investment. In other words, the TWG Paper assumes that only Housing/Property has a capital return component and that PIE, Superannuation Fund and Company investments don't. This is clearly not the case.

The METRs on savings as presented in Figure 21 of the TWG Paper cannot therefore be accepted at face value. If a capital return component were to be included for PIE, Superannuation Fund and Company investments, then all three would have lower METRs than that presented in the TWG Paper analysis.

The TWG Paper also omitted a key asset class being direct Share Investment. If this asset class were to be included, it would also have a lower MERT than Rental Property under the TWG Paper framework.

Given underlying concerns with the TWG Paper you have asked us to expressly address a calculation of marginal effective tax rates for four specific asset classes: Bank Account, Share Investment, Rental-property (equity) and Owner-Occupied Housing (equity). Further you asked that we replicate the TWG Paper methodology to establish the equivalent risk adjusted components of the combined marginal Income Tax, Inflation and Local Authority Rates imposts on various asset classes, the marginal effective income impost (“MEII”).

We have taken a different approach to the effective tax on Owner-Occupied Housing (based on the opportunity cost of renting and owning a home and specifically factoring in non-deductible maintenance expenditure required to sustain any capital appreciation). Further, we have provided for Rental-property capital gains to be subject to either no capital taxes (as per the TWG Paper) or deferred capital taxes equivalent to half the prevailing marginal tax rate on income.

We emphasise that inflation is a key determinant of the differentials in the TWG Paper METR estimates as it is treated as a “tax” on Bank Deposits and although a factor in other asset classes there is a partial offset as it is also a component of the return on these assets. We have therefore isolated the “inflation impost” as this is a monetary phenomenon and should not in our view be confused with marginal effective income tax rates.

Morgan Wallace Framework & Methodology

Taxes are nominal and investor required rates of return are nominal after tax, in turn based on their expectations for inflation and the risk and return characteristics of specific investments.

Our framework is therefore to assess the required nominal rate of return for each asset class for a given reference nominal interest rate. For each asset class we establish a distinct capital appreciation component of the return with the balance of the required rate of return delivered through the nominal income stream (interest/dividends/rent/imputed rent). The marginal effective income tax rate on savings is then derived. We then derive and separately identify the Inflation and Local Authority Rates imposts.

Our assessment of the required nominal rate of return for each asset class is made through application of the Capital Asset Pricing Model (“CAPM”). We have adopted the post-tax version of CAPM as employed by The Treasury in its capital charge regime and the Commerce Commission in its various pricing decisions.

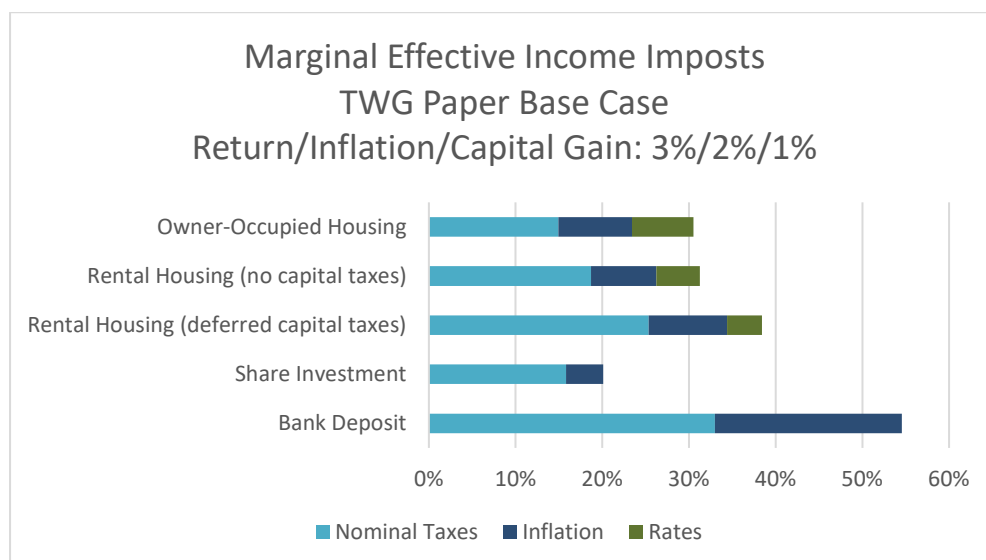
Our calculation of the required nominal rate of return for each asset class assumes no leverage. Should leverage be introduced the required nominal rate of return on equity would increase correspondingly.

We have prepared a spreadsheet model to not only present components of the TWG Paper METRs but also to allow scenario analysis and in particular model parameters that we consider more relevant to the prevailing economic environment.

In Appendix One we step through the derivation of returns and the effective marginal income tax rates, inflation and local authority rates imposes equivalent to the TWG Paper Base Case.

Morgan Wallace Analytical Outputs

The components of the TWG Base Case METRs adjusted for the risk adjusted required returns of the various asset classes is a represented below.



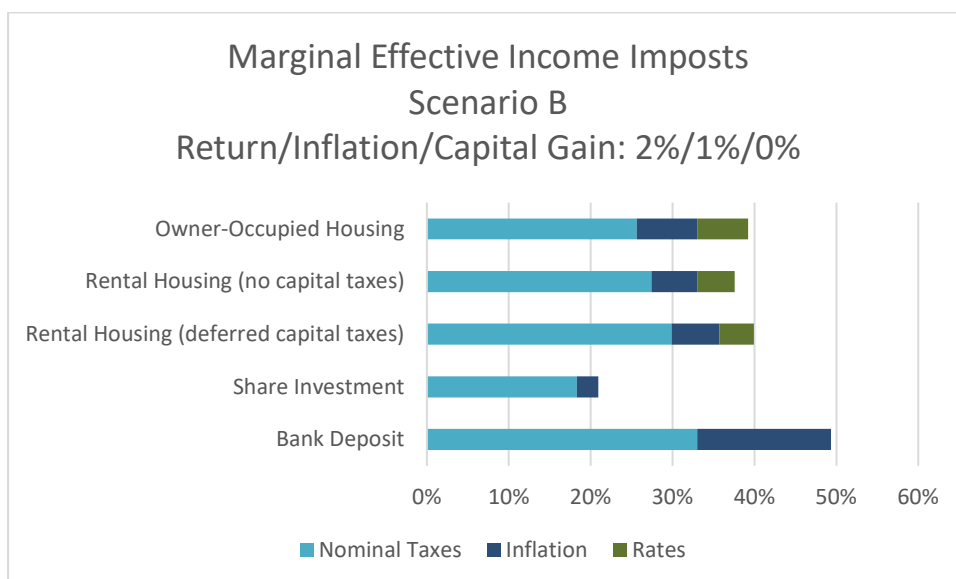
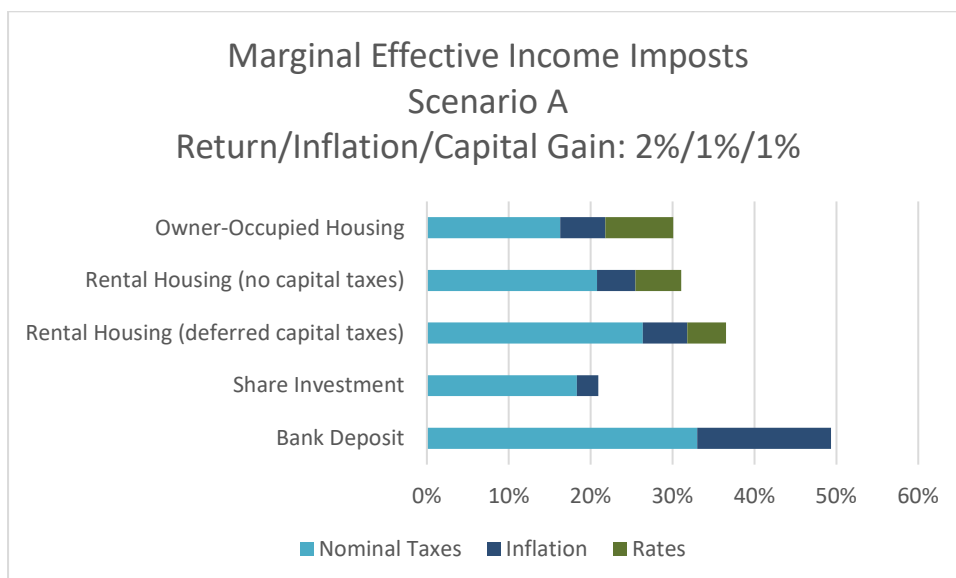
The key inputs into the TWG Paper Base Case are the Real Pre-tax Interest Rate, Inflation and the Real Pre-tax Capital Gain rate (3%, 2% and 1% respectively).

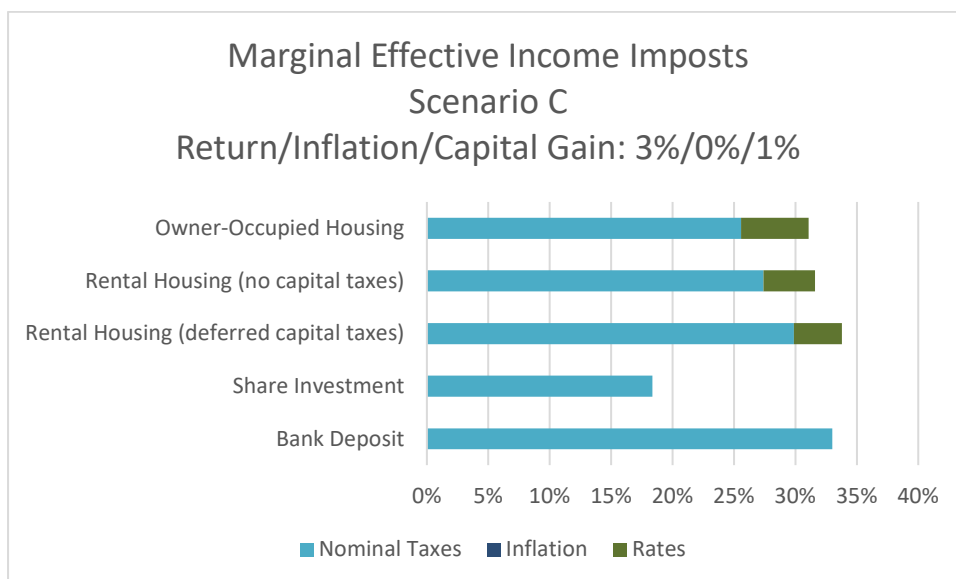
Morgan Wallace notes that collectively the TWG Paper Base Case assumptions are inconsistent with the prevailing nominal interest rate environment as they deliver up a required risk free nominal interest rate of 5% when the prevailing rate is 3%.

Accordingly, we present scenarios where we employ different assumptions for the Real Pre-tax Interest Rate, Inflation and the Real Pre-tax Capital Gain rate.

Scenario	A	B	C
Real Pre-tax Interest Rate	2%	2%	3%
Inflation	1%	1%	0%
Real Pre-Tax Capital Gain	1%	0%	1%

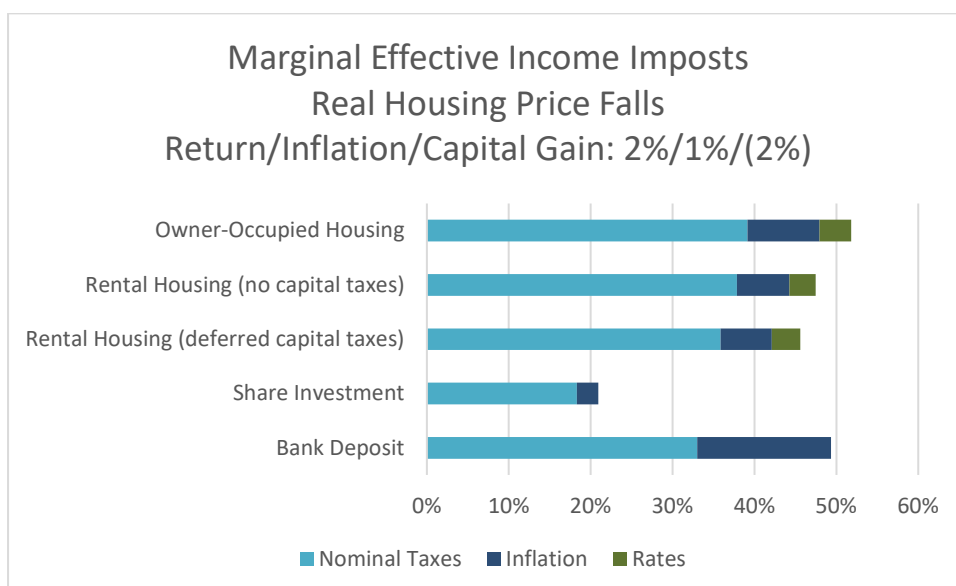
As is clearly demonstrated in the following charts removing and/or reducing inflation and/or real pre-tax capital gains from the baseline assumptions removes much of any perceived anomaly in the marginal effective income imposts.





To clearly demonstrate the consequences of the Housing risk in the current economic environment where Housing affordability is at issue a further scenario is presented below consistent with the current interest rate environment but with provision for a Real Pre-tax Capital Loss of 2%.

We would not dismiss such a scenario lightly noting that the Japan Home Price Index Composite for the Tokyo Metropolitan area stood at 90.96 in December 2017 in contrast to 185.47 in December 1993 a decline of 51% over 24 years¹.



¹ Sourced from http://www.reinet.or.jp/en/tentative_calculation.html

Concluding Observations

The Marginal Effective Income Imposts (“MEIIs” – which the TWG Paper defines as METRs) are particularly sensitive to the key assumptions of Real Pre-tax Interest Rate, Inflation and the Real Pre-tax Capital Gain rate.

It is our view that the principal assumptions adopted in the TWG Paper are not consistent with the prevailing expectations for real and nominal returns and need not be representative of consensus expectations for longer term real and nominal returns.

Consideration of a range of scenarios is essential if a true picture of the prospective MEIIs are to be considered. Further the components of the MEIIs need to be clearly identified as relating to prevailing marginal income tax rates and expectations re likely nominal returns, inflation rates and capital asset appreciation/depreciation.

Far from the suggestion in the TWG Paper that Housing is a significantly tax preferred asset class we submit that Housing has largely been an inflation preferred asset class that has benefitted particularly in the recent past from accommodating monetary policy and the associated decline in both nominal and real interest rates to historic lows.

Further we note that based on our analysis direct Share Investment has been tax preferred not only to Bank Deposits but also Rental Housing. Further direct Share Investment has also been an inflation preferred asset class and does not incur Local Authority Rates. Under the TWG Paper Base Case and all scenarios presented the MEII on direct Share Investment tracks significantly below Bank deposits and Rental Housing.

Yours faithfully



B H Wallace
Executive Director

About Bevan Wallace

Bevan is a Fellow of the Institute of Financial Professionals, New Zealand (Inc) and a Chartered member of the Institute of Directors. He holds a Master of Commerce with First Class Honours in Economics and Accountancy (University of Canterbury), 1981. He provides financial economic advisory services over a wide range of issues including strategy, performance measurement, cost of capital and capital market transactions. Bevan has acted as an expert in valuation and investment management issues and in judicial proceedings and regulatory reviews.

Appendix One: TWR Paper Base Case

To facilitate comparison with the TWG Paper METRs our base assumptions are:

Real Interest Rate:	3%
Inflation:	2%
Investor Marginal Tax Rate:	33%

Additional Inputs for the post investor tax CAPM

Risk Free Rate:	5.06%	(1+Real Interest Rate) x (1+Inflation)
Post-tax Market Risk Premium:	6.5%	(common usage)

Specific risk factors (asset betas):

Bank Deposit	0	(as per TWG Paper)
Share Investment	0.7	(est. average asset beta given market leverage)
Rental Housing	0.35	(est.)
Owner-Occupied Housing	0.2	(est. reduced tenancy risk)

Based on the above inputs and applying the post investor tax CAPM the required returns from each asset class are given by:

Risk Free x (1 – Tax) plus Beta x Post Tax Market Risk Premium

The post-investor tax required returns are therefore:

Bank Deposit	3.39%	$(5.06\% \times (1-33\%) + 0 \times 6.5\%)$
Share Investment	7.94%	$(5.06\% \times (1-33\%) + 0.7 \times 6.5\%)$
Rental Housing	5.67%	$(5.06\% \times (1-33\%) + 0.35 \times 6.5\%)$
Owner-occupied Housing	4.69%	$(5.06\% \times (1-33\%) + 0.2 \times 6.5\%)$

Components of post-investor tax required returns:

	Capital	Income
Bank Deposit	0	3.39%
Share Investment ²	4.91%	2.89%
Housing ³		
Rental	3.02%	2.57%
Owner-Occupied	3.02%	1.62%

The equivalent pre-tax returns depend on the effective tax rates. The TWG Paper assumed nil for Housing Capital returns and applied the marginal tax rate for Bank Deposits and added Rates back to the marginal tax rate for Housing. As noted previously no consideration was given to the taxation of direct Share Investments.

² The Smartshare NZ Top 50 Fund Gross Dividend Yield is currently 4.31% and therefore assuming tax of 33% the Net Yield would be 2.89%. The balance of the required rate of return is assumed to be capital gain.

³ The TWG Paper provides for 1% real capital gain. The balance of the required return is assumed to be Net rent/imputed rent. The TWG Paper assumes a lower income yield of 1.98% on the basis of delivering a capped real return of 3%.

We consider the marginal tax rate on Housing Capital returns dependent upon the specific status of the investor. For owner-occupied housing the rate can safely be assumed to be nil. For Rental-property it would certainly be less than the marginal tax rate due to the ability to defer tax but need not be nil. We have therefore considered alternative assumptions of 16.5% and nil. The Income yield of rents/imputed rents is assumed to be taxed at 33%.

For Share Investments we have assumed a nil tax rate for Capital returns and 33% for income consistent with our assumption regarding Net Yield.

Tax rates on the components of post-investor tax required returns are therefore:

	Capital	Income
Bank Deposit	0%	33%
Share Investment	0%	33%
Housing		
- Rental	0%-16.5%	33%
- Owner-Occupied	0%	33% ⁴

The components of the required pre-tax returns as derived from the required post-tax returns are therefore:

	Capital	Income
Bank Deposit	0%	5.06%
Share Investment	4.91%	4.31%
Housing		
- Rental	3.02%-3.62%	3.83%
- Owner-Occupied	3.02%	2.43%

The aggregate required pre-tax returns are therefore:

Bank Deposit	5.06%
Share Investment	9.43%
Housing	
- Rental	6.97% - 7.59%
- Owner-Occupied	5.51%

The ratio of post-tax to pre-tax returns are therefore:

Bank Deposit	67%
Share Investment	84%
Housing	
- Rental	75%-81%
- Owner-Occupied	85%

The nominal METRs are therefore:

Bank Deposit	33%
Share Investment	16%
Housing	
- Rental	19%-25%
- Owner-Occupied	15%

⁴ The imputed rent is deemed equivalent to payments made from tax paid income including maintenance expenditure and arguably insurance essential to maintaining the real value of the asset.

The TWG Paper adds an inflation “tax” and a for Housing a Local Authority Rates “tax” to derive the TWG METRs, which we consider to be the marginal effective income imposts “MEIIs”.

To do so the post-tax real returns are derived.

Real after-tax returns:

Bank Deposit	1.36%	$(1+3.39\%)/(1+2\%)-1$
Share Investment	5.82%	$(1+7.94\%)/(1+2\%)-1$
Housing		
- Rental	3.59%	$(1+5.67\%)/(1+2\%)-1$
- Owner-Occupied	2.64%	$(1+4.69\%)/(1+2\%)-1$

The real pre-tax returns are:

Bank Deposit	3.00%	$(1+5.06\%)/(1+2\%)-1$
Share Investment	7.29%	$(1+9.43\%)/(1+2\%)-1$
Housing		
- Rental	4.87%	$(1+6.97\%)/((1+2\%)-1$ to 5.48% $(1+7.59\%)/(1+2\%)-1$
- Owner-Occupied	3.44%	$(1+5.51\%)/(1+2\%)-1$

The ratio of real post-tax to real pre-tax returns are therefore:

Bank Deposit	45%
Share Investment	80%
Housing	
- Rental	66% to 74%
- Owner-Occupied	77%

The Real or Inflation adjusted marginal effective tax rates adjusted for the inflation impost are therefore:

Bank Deposit	55%
Share Investment	20%
Housing	
- Rental	26%-34%
- Owner-Occupied	23%

The Inflation impost component of the returns are therefore:

Bank Deposit	22%	(55%-33%)		
Share Investment	4%	(20%-16%)		
Housing				
- Rental	8%	(26%-19% - rounding)	to 9%	(34%-25%)
- Owner-Occupied	8%	(23%-15%)		

The TWG Paper also introduces a 0.34% pre-tax provision for Local Authority Rates. This does not effect the required after tax return but in our analysis has been added to the pre-tax return to Housing equating to a 4% to 7% lift in the Housing MEIIs.