BRAD

Chapter 5

TAXATION OF LOCAL AND FOREIGN FINANCIAL ARRANGEMENTS

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Chapter 5: taxing local and foreign financial arrangements

Our intrepid tax policy team, Claudia, Brad and Sami, in the Tax Department of their country has been asked by their Tax Minister to provide extra briefing on the taxation of financial arrangements, including, in particular, leases and rights. Extension to the international arena is also required.

There is much excitement in the team, or at least some in the team, because there are indications that the Tax Minister is shaping up for a major package of genuine tax reforms set within a redesigned tax code drawing heavily a tax value approach. The expectation by some in the team is that the package will increase productivity by having taxation interfere less with commercial investment decisions - and also promote greater fairness.

The treatment of financial arrangements in current income tax law of Brad's country is very similar to that in Australia (the TOFA Act, enacted in 2009), as explained in Australian Parliament (2008) and outlined in ATO (2023) - (see Preface). Wood (2001) explains some of the history of the development of the taxation of financial arrangements in Australia - including Ralph Platform (Chapters 5, 6, 7, 9, 10 and 34) and Ralph Review (Chapter 9) - and canvasses a wide range of potential complexities involved in legislating such arrangements.

Claudia prepares for her briefing of her Tax Minister by taking her team through the taxing of selected financial arrangements using the tax value approach to tax code design. Claudia has already made the minister familiar with that approach. She is preparing the way for such tax code redesign to fully embrace the taxation of financial arrangements.

For those readers who are in any way confused by the team's heavy analysis of the taxing of financial assets and liabilities, or might even want to delve into more numerical examples, there is always Mayo (2011), that famous, or infamous, "book of numbers" to consider.

The team's discussions were helped by comments and suggestions from Roger Paul, former senior executive in the Australian Treasury who contributed to Australia's TOFA legislation though the Ralph Platform and Ralph Review and subsequent legislative drafting processes. Ownership of these team discussions, however, definitely remains with the team.

OK, guys, the Tax Minister wants a more in-depth coverage of the tax treatment of financial assets and liabilities under an income tax code reworked using the tax value methodology.

Remember, previously, we just took him through arrangements that had known cash flows with associated return able to be imputed?

He then particularly mentioned rights and leases and also asked us to bring in the international dimension.

I'm going to start with rights/leases over non-depreciable assets*, and choose the situation where people who own a parcel of land are considering selling the right to someone else to use that land exclusively for a limited number of years.

And I'm going to say the owners paid $1000 for the land and the land can be used to earn $100 of net receipts a year permanently.

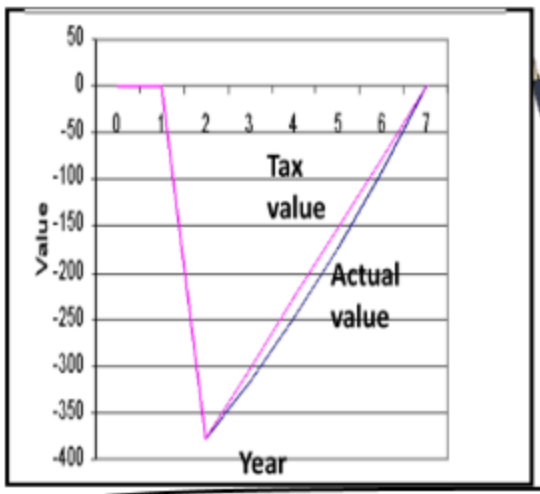
Consequently, if future net receipts are discounted at 10% pa, the value of the land stays permanently at $1000 producing a 10% return each year.

The example is too simple and unrealistic to bring out the real tax issues involved.

On the contrary, Brad, I've chosen a simple asset so that we can focus on the tax design issues relating to the right over the asset.

I'm looking forward to seeing the correct tax treatment of rights.

* Ralph Review, pp 371-381.



OK imagine the owners plan to sell the right to someone else for $379 to use their land for 5 years and access the $100 that can be earned from the land each year.

The sellers would be taking on this $379 liability of providing the buyer full access to their land for the 5 years.

Both sellers and buyer see a 10% pre-tax return in the deal.

Yeah, the sellers would be accepting a payment for the asset they have suddenly created and sold. Tax the payment via capital gains tax.

Brad, that $379 payment should not be taxed up front.

The sellers would simply swap the right of access for another asset: cash, or, alternatively, they might accept a series of lease payments.

Claudia is talking a $379 up-front lease premium. Tax it as we do now!

What? Do we?

We do, Sami, but you're right.

The year-by-year reduction in the up-front size of the sellers' liability shown in my chart should be included in their taxable incomes, not the up-front amount they received for providing the right.

What? No! Keep taxing the lease premium.

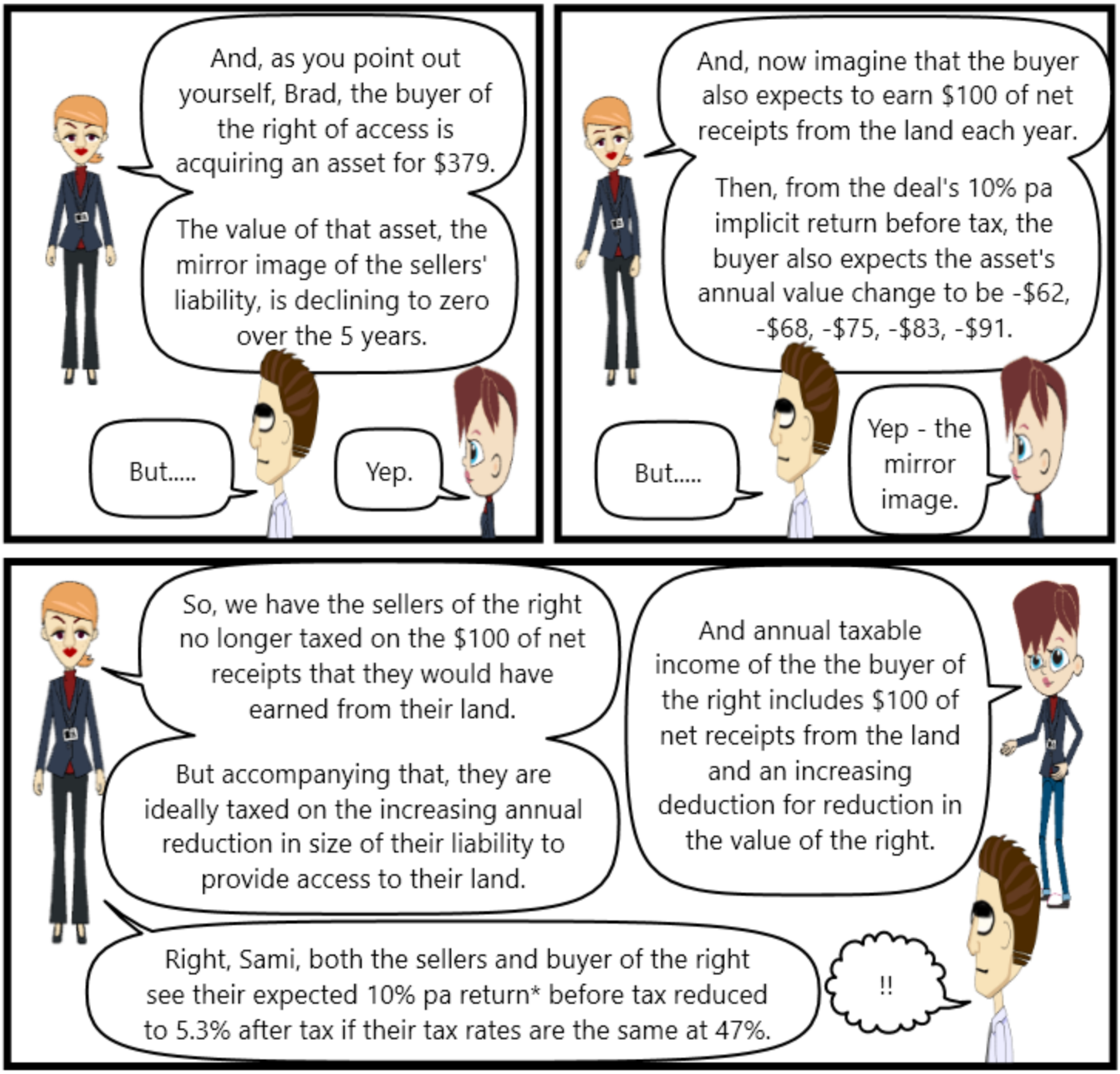
In fact, Brad, say, we knew that the sellers were earning 10% pa by receiving $379 up front to give up $100 of net receipts in each of the 5 years.

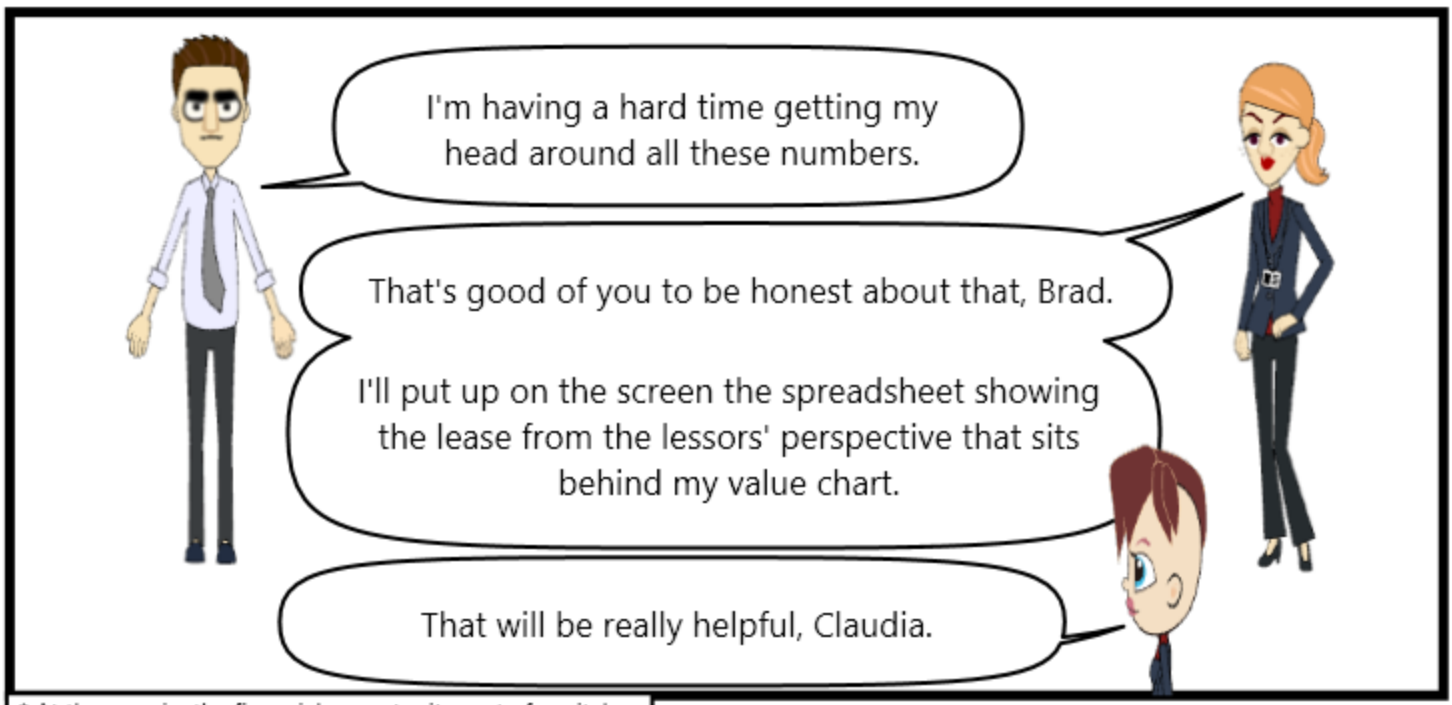
We could neatly determine the increasing year-by-year reduction in size of the sellers' liability - using our general tax value formula* - to accompany the $100 of net receipts not in their assessable incomes each year.

Thus, in the first year the reduction would be $62, with value going from -$379 to -$317, or:
(-$379 x 1.1) - (-$100)

As shown in the "Actual value" line in my liability chart, the change in value would increase year by year over the 5 years: $62, $68, $75, $83, $91.

* Ch4, p 5, p 34.





* At the margin, the financial opportunity cost of capital.

LAND			LESSORS' LEASE LIABILITY								
Year	Cash Flow		Year	Net receipts(a)	Value change(b)	Value (c)	Income (d)	Pre-tax cash flow(e)	Tax at 47%(f)	Post-tax cash flow(g)	
0	-1000		0	0	0						
1	100		1	0	0						
2	100		2	0	0	-379		379		379	
3	100		3	-100	62	-317	-38	-100	-18	-82	
4	100	Net recpts sold	4	-100	68	-249	-32	-100	-15	-85	
5	100		5	-100	75	-174	-25	-100	-12	-88	
6	100		6	-100	83	-91	-17	-100	-8	-92	
7	100		7	-100	91	0	-9	-100	-4	-96	
8	100		Return % pa					10%		5.3%	
9	100										
10	100										
...	...										

(a) The net receipts that lessors believe they are giving up

(b) Income in (d) less net receipts in (a)

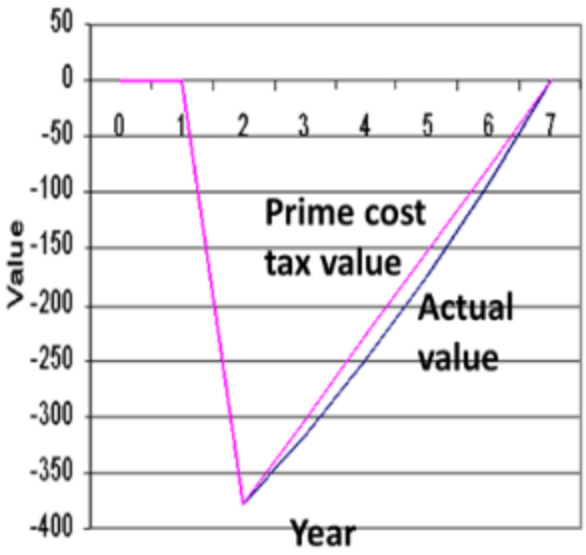
(c) -$379 in Year 2 then prior value plus value change in (b)

(d) Start-year value times 10%

(e) $379 value in Year 2 then net receipts given up in (a)

(f) Income in (d) times lessors' 47% tax rate

(g) Pre-tax cash flow plus tax savings (lower tax) in (f)



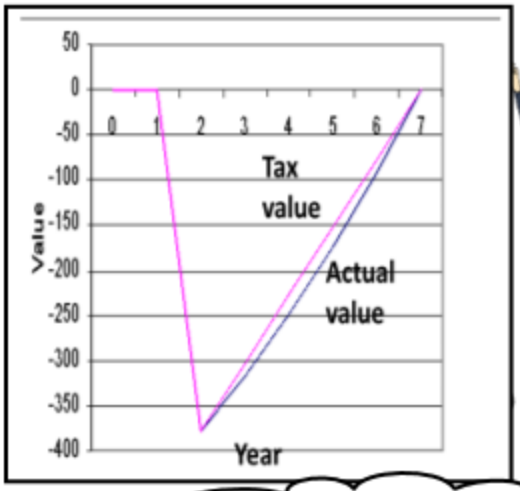
OK, that helps to understand the numbers. But come on, Claudia, we are not going to know what amount of annual net receipts the sellers might be expecting to be giving up each year in return for the $379.

That's certainly correct, Brad.

But not so if the right were over a financial asset with known payments and implicit rate of return.

Moreover, $100 per year could be deduced if a 10% pa return and equal annual net receipts were assumed.

So, it is important to get clear the principled tax treatment of such arrangements.



Nevertheless, Brad, a practical tax treatment would be to spread the $379 payment for the right over five $76 annual amounts.

That is the "Tax value" schedule in my chart.

This would front load value change, with the sellers taxed a little heavier on their liability and the buyer taxed a little lighter on the asset mirror image.

Taxing the payment up front still sounds good.

Claudia, what about delayed payments?

OK, Sami. Say, the buyer of the right of access agreed to pay $100 per year* for the right instead of $379 up front.

The sellers of the right would still ideally include in assessable income the estimated annual reduction in the size of their liability.

But their tax return would now also take into account a financial asset in the form of a delayed payment for the right.

You mean a stream of rental payments.

The delayed payments are a loan, and the buyer would be assessed on the loan liability plus the right itself.

Well, Sami, tax assessments would be helped if the delayed payment were in the form of a formal loan to the buyer.

The up-front amount of the loan would show the value of the right to the sellers and buyer.

And, if the loan repayments were taken to match annual net receipts from the land, they could be used to estimate annual value change of the right itself.

In fact, the general tax value formula splits what would be $100 annual loan repayments into principal and interest components.

In fact, the principal components match the value changes from my chart: $62, $68, $75, $83, $91.

And the interest, or "income", component is the difference between these amounts and $100 in each year.

* At the margin, the annual user cost of capital....

* ....or, interest opportunity cost + value change.

The interest component adds to the lender's assessable income and decreases the borrower's.

To reiterate, the formula applied to the loan to get year-by-year tax values is that for financial assets with known cash flows* and is applicable across financial liabilities and physical assets with known flows.

End tax value = Start tax value x (1 + annual return) - annual net receipts.
So neat!

Hang on, you two!

There is something wrong with your taxing of the right of access to land.

Scrapping the formal loan idea, the annual $100 of payments by the buyer are rental payments for access to the land.

They are assessable income to the sellers of the right and a deduction to the buyer.

In your simple example, that means the sellers just get taxed each year on the $100 they would have earned working the land themselves.

And the buyer pays no tax on the deal: the $100 deduction each year exactly matches the $100 of assessable income from working the land.

Is that right, Claudia?

In fact, some argue that this outcome for the buyer reflects the tax advantage of deducting the rental payments in full as opposed to only loan interest being deductible.

Is that right, Claudia?

Brad, you have deduced the right bottom-line tax outcome for the sellers and buyer.

But your analysis misses completely the annual changes in value of the sellers' and buyer's assets and liabilities.

Changes in value which happen to neutralise each other in this particular situation.

* Ralph Legislation, p 145.

Let's look at the sellers first.

Their net receipts from the deal include the $100 rentals, as you say, Brad.

But, as we saw earlier, the stream of annual changes in value of these at 10% pa, or their principal components, is: -$62, -$68, -$75, -$83, -$91.

For the sellers, these components reduce assessable income.

And, remember the stream of annual reductions in the size of the sellers' liability to provide access to their land, increasing their assessable income, is: $62, $68, $75, $83, $91.

So, you can see that the annual reduction in value of the sellers' financial asset - the stream of $100 rentals - neatly offsets the annual reduction in size of their liability.

In net terms, the sellers' annual assessable income increases by $100.

As you point out, Brad, that is the same amount of assessable income had they continued to work the land themselves.

I now understand it from the buyer's perspective.

Sure, the buyer's annual assessable income goes up by $100 from working the land and down by $100 from paying the rentals.

But, each year the buyer's assessable income is reduced by a reduction in value of the buyer's right of access.

And, in this case, that reduction matches exactly the annual reduction in size in the buyer's financial liability - the stream of rental payments.

This reduction, of course, adds to assessable income.

So, as Brad said, there is nil net effect on the buyer's assessable income.

That is analogous with the situation where borrowing at 10% pa to buy an asset producing 10% pa results in no net tax.

Aw, c'mon, this is all contrived....

The proper treatment is to simply have the gross rentals deductible to the buyer and assessable to the sellers of the right.

Your simple example just shows how irrelevant are annual changes in values of associated assets and liabilities.

On the contrary, Brad, the example shows the circumstances where these value changes cancel each other out.

These circumstances are where the profile of rentals match that of the expected net receipts of the underlying asset subject to the right.

Practical tax design, therefore, would simply include gross rentals in the sellers' and buyer's assessments - in circumstances where the rentals have suitable profile.*

Equal annual rentals might be acceptable, for example, even for underlying depreciating assets.

In any case, in the absence of a formal loan agreement, this would avoid using a deemed interest rate to compute the up-front value of a right from the known rental payments.

There. I knew I was right!

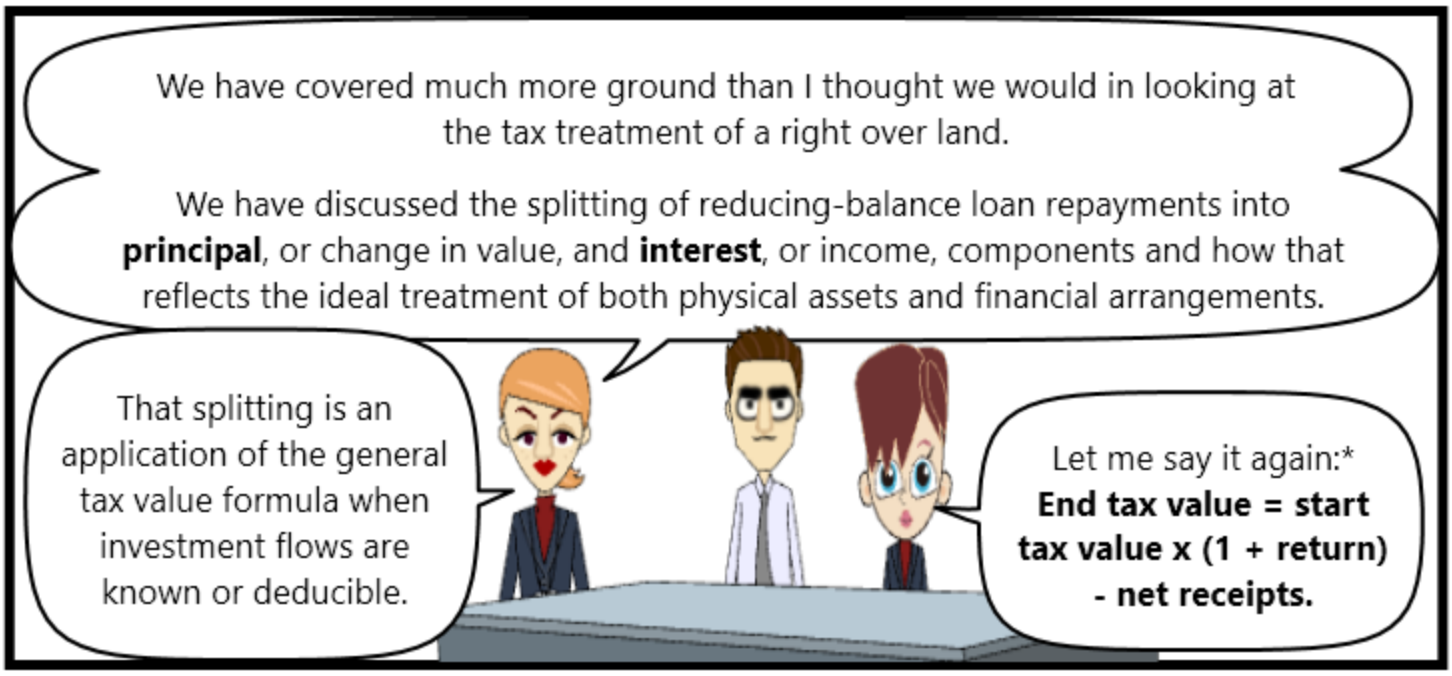
But Brad, this simple design work-a-round does not apply, as we saw, where a single up-front payment is made for the right.

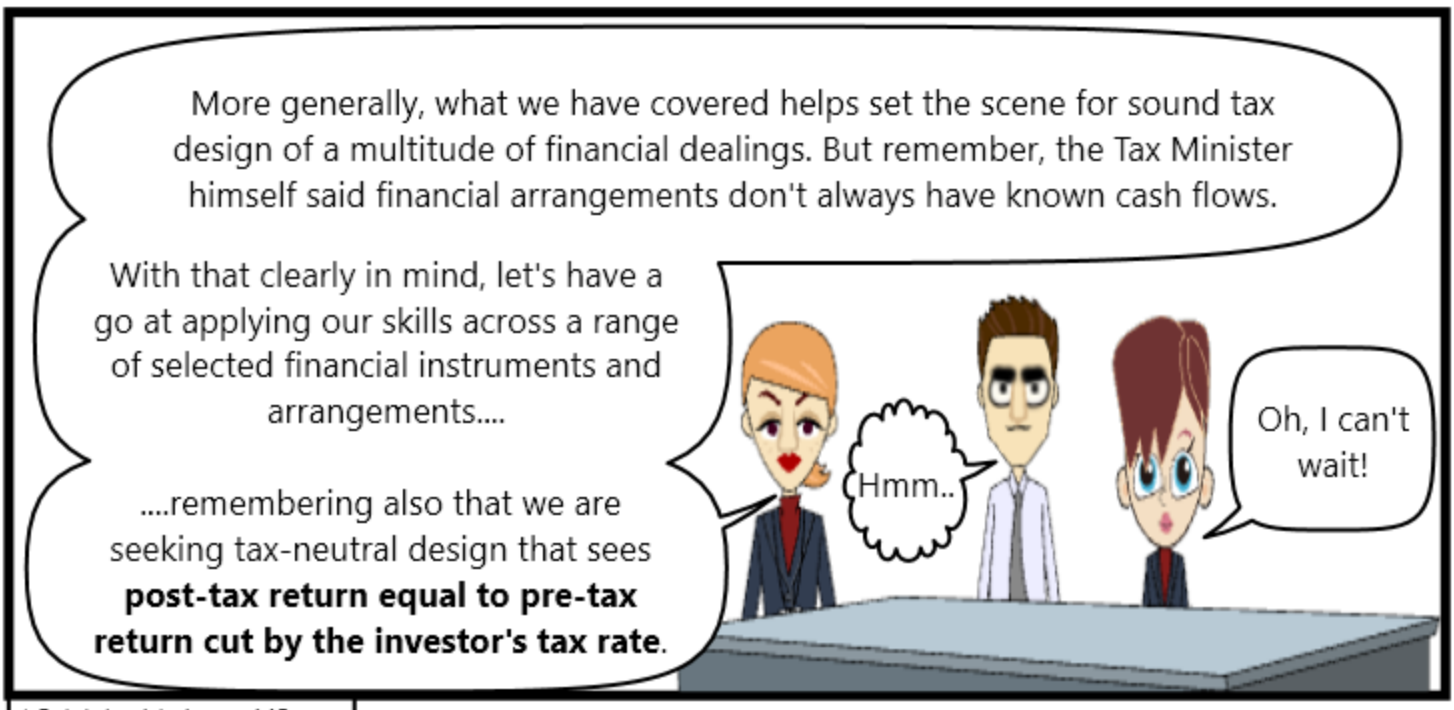
There, annual value change of the right must be used.

The same applies if, say, the right were paid for by a single payment at the expiration of the right.

Yeah, with a final balloon payment, our sellers of the right over land would have the same liability as in your chart, Claudia, but would have a payment asset that looked like my zero coupon bond - with increasing, rather than decreasing, taxable interest component.

* Ralph Review, p 373.





* Ralph Legislation, p 145.

Financial assets/liabilities: overview

As with physical assets, the annual income of financial assets comprises any **net receipts produced (and withdrawn) plus annual change in value**.

We know!

And, annual change in value of traded financial assets, like listed company shares or options or futures over them, can be readily obtained.

What? In order to tax annual accrued capital gains when future value is highly uncertain?

Brad, some taxpayers may elect to have tax values of their financial assets and liabilities set on a **mark-to-market** (or **fair value**) basis to align with their accounting practices.*

But, certainly, replacing current general CGT realisation treatment of shares with annual change in market value would involve bold policy change.

What we want today is to be clear on the practical measurement of annual change in **tax value**, and associated taxable income, of a wide range of financial arrangements, including listed shares, where **mark-to-market** is **not applied**.

We want to show the minister how a redesigned tax code would deal with these arrangements.

First, I want to work through instruments like bonds, debt and annuities where **accrued values** - estimates of current market value, used as **tax values** - are computed from known future cash flows and associated implicit return.

Then we'll look at simple bank accounts and particular bonds where variable annual income is measured directly.

We'll round out with leasing, a capital repayment assignment and foreign bonds and bank accounts.

I'll be assuming most sympathy for assessing value change on realisation remains where applying accruals is either too sensitive or uncertain.

Wow!

OK, Sami.

Can we also look at instruments with regular payments but unsure future value like converting preference shares?

* Discussed in Ralph Review, pp 337-339.

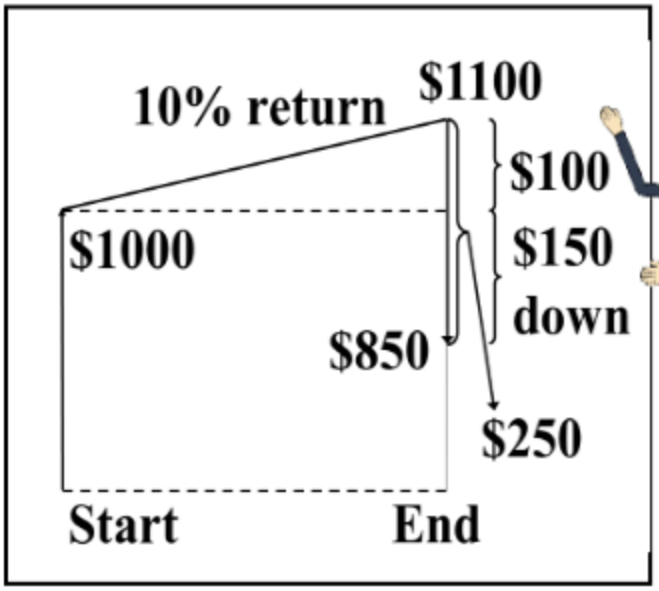
Easy to decipher are financial instruments with with known start value and end value, plus any net receipts in intervening years.*

The overall per annum return computed from these numbers is then used to estimate annual changes in accrued value and associated taxable incomes.

Yes, Sami, I'm going to use that chart to illustrate, even though it only spans a single year.

Very artificial

Your chart showing income and value change of an asset shows this, Claudia.



So, from known $250 net receipts withdrawn and $850 end-year value, the overall pre-tax return from this asset is 10% pa, from: [250 +(850-1000)]/1000, or 0.1, x100%.

The investor has judged that this pre-tax return is just acceptable given the risks involved and the alternative bank interest available.

Now what does the chart tell us about income taxation in the year shown?

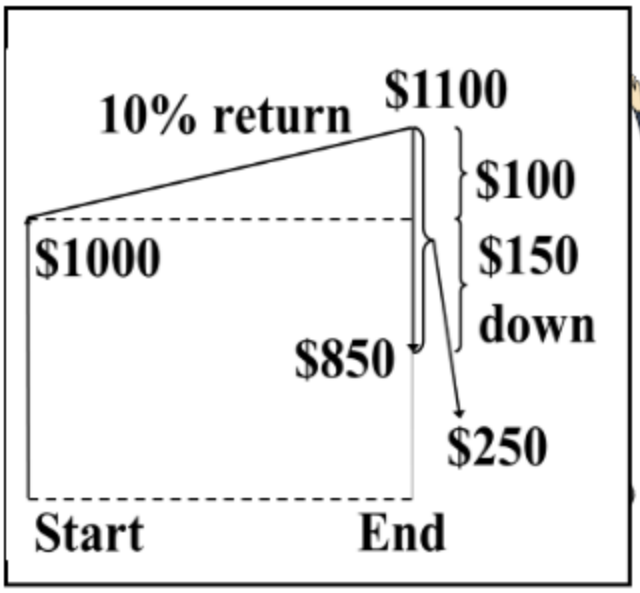
First, $100 of taxable income is immediately got from **taxable income = start tax value x return**, or, in this case, $1000 times the 10% return. The annual computation is the same for a multi-year investment even though end value is not known until the final year.

With a 10% pre-tax return, the investor on a 47% tax rate would see a prospective **post-tax return of 5.3%**, pre-tax return reduced by 47%, exactly the same proportional effect tax would have on bank interest returns.

All looks artificial when just dealing with an investment over a single year.

Yes, necessary for tax neutrality.

* Ralph Platform, pp 31, 162-163, 165-166, 187-188, 725.



Second, end-year tax value is got from Sami's favourite formula for change in tax value:*
End tax value = start tax value x (1 + return) - net receipts.

In this case, $250 of annual net receipts is more than the $100 of taxable income - so tax value declines accordingly to:
$850 = ($1000 x 1.1) - $250.

From, **taxable income = net receipts + change in tax value** (ie end less start tax value)
= start tax value x return

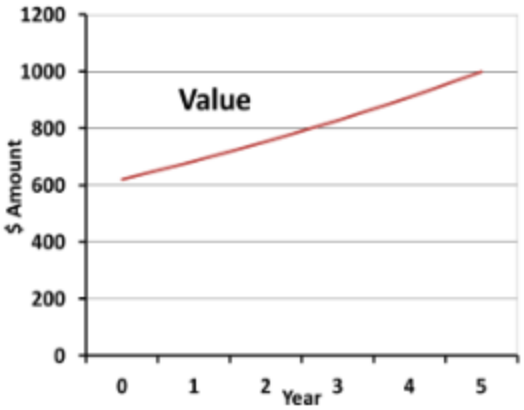
Get, **end tax value**
= start tax value x (1 +return) - net receipts
= start tax value + taxable income - net receipts

And, **net receipts = taxable income - change in tax value**

See how this general formula for end year tax value comes from our two definitions of taxable income.

And how rearranging the over-arching definition of taxable income splits any net receipts in a year into taxable income, or **interest**, and value change, or **principal**, components.

We saw that with the right over land and any delayed payment stream for the right.



Now, when there are no net receipts in a year, taxable income is just change in tax value, or start value times return.

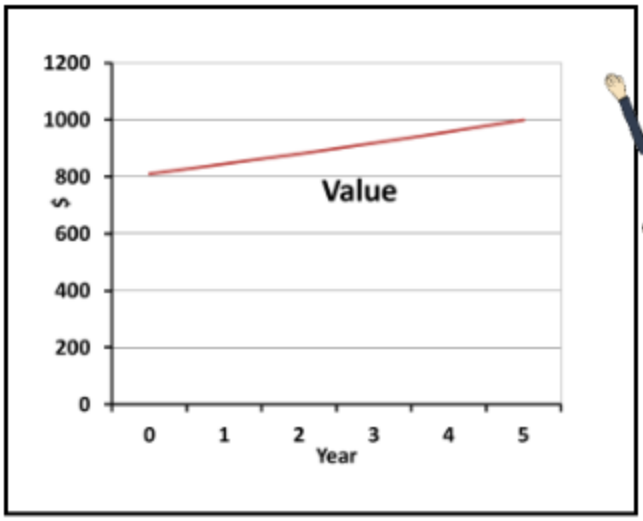
As with Sami's zero coupon bond offering here $1000 in Year 5.

Someone wishing to make 10% pa would be prepared to pay $621 at start Year 1 with value and taxable income increasing across the 5 years: $62, $68, $75, $83 and $91.**

And, of course, for an investor on a 47% tax rate, **post tax return is 5.3% pa**.**

* Ralph Review, pp 343-344, Ralph Legislation, p 145.

** Mayo (2011), p 119.



Imagine now that, instead of zero coupons, the bond offered, say, annual coupons of 5% pa of the bond's $1000 face value, or $50.

The investor looking for a 10% pa return from the bond would then be prepared to pay $810 at start of Year 1 rather than the $621 when only zero coupons were on offer.

Taxable income in each year is simply start tax value times 10%. For year 1, that is $81, or $810 times 0.1.

And, from our general tax value formula, each year's end tax value is simply start tax value plus taxable income less $50 net receipts.

So, start Year 2 tax value is $842, or $810 plus $81 less $50, with Year 2 taxable income then $84.2. And so on, resulting in a **5.3% pa post-tax return** for the 47% rate investor.*

Why not just work out each tax value from the interest rate need to get $810 to the $1000 face value?

Oh, c'mon, Brad - it's not a zero-coupon bond.

Sami's right, Brad, the 4.29% interest rate that you suggest would result in a start Year 2 tax value of $845 instead of $842.

Aw, general interest rate changes will change the value of the bonds anyway.

That's true, Brad, and some argue that your method should be used for secondary market sales of bonds.

There is a lot to be said, however, for using a consistent method, based on the key definition of **taxable income equalling net receipts plus tax value change**, for all purchases where possible - both original and secondary.

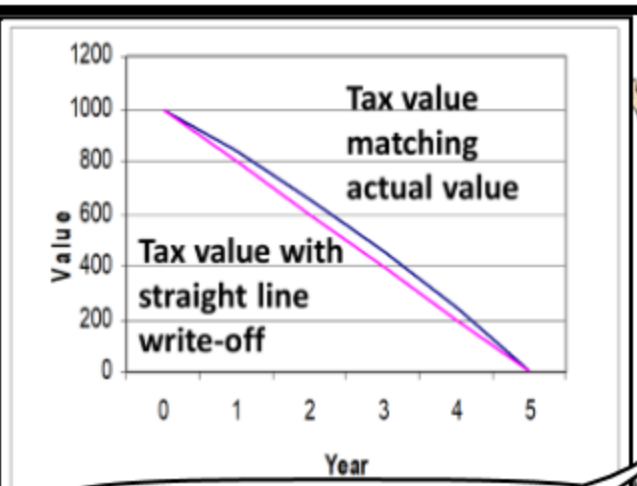
* Mayo (2011), p 120.

You now see how that general definition of taxable income plays out in practice year by year for any financial arrangement with known future cash flows: first with **annual taxable income equal to start tax value times return**; and then, **end tax value equal to start tax value plus taxable income less net receipts**.

This can be applied to a whole host of arrangements, including borrowing and lending deals.

Yes, change the $810 up-front amount for the 5% coupon bond to $1000 and you have a $1000 5% simple interest mortgage.

What about annuities?



OK, say, someone on a 47% tax rate buys an annuity at start Year 1 for $1000 that provides $264 in each of the ensuing 5 years.

The buyer gets a 10% pa pre-tax return.

Applying that 10% to start tax value in each year, in Year 1 taxable income would be $100 and change in value would be -$164, or taxable income less $264 net receipts.*

Thus, year by year the buyer's $264 of annual net are split into interest and principal components.

Splitting the annual receipts into interest (taxable income) and principal (value change) components results in a **5.3% post-tax return** for the buyer.

That is the same post-tax return that the annuity buyer would get from a bank offering 10% interest on deposits.

In contrast, providing 5-year straight line write-off of the $1000 price would produce a 5.44% post-tax return.*

Hey, all this matches the delayed payment asset of the sellers of the right over land.

And the mirror image is the delayed payment liability or a reducing balance debt.

Which shows the versatility of the design.

Hmm..

* Mayo (2011), p 116.

Known-income arrangements: bank accounts, indexed bonds, shares

We have seen how the over-arching definition of taxable income as net receipts plus change in tax value may be used with some financial arrangements to, first, get annual **taxable income** up front and, secondly, determine **end-year tax values**.

Yes, all so neat and so practical and widely applicable.

But, let's not get too carried away with any thoughts of this approach being applicable across all financial arrangements.

Yeah, Sami, let's not.

Remember, this way of determining taxable income and end-year tax value only applies to arrangements where future cash flows are know or deducible.

Yeah!

It would be silly to specify taxable income of, say, a bank account on the basis of start-year amount in the account before the interest actually earned on the account is known.

Yeah. Silly

Interest earned on an account adds to account value and, so, taxable income.

Interest withdrawn by the account holder - "net receipts" in our general parlance - reduces account value.

So, you can see how the annual interest income fits our general specification of net receipts withdrawn plus change in value.

No matter how and when interest rates change, our cash investor on a 47% tax rate sees tax cut 47% out of pre-tax interest returns.

Of course, Claudia, everyone knows bank interest is taxable income!

Everyone knows that 10% interest earned before tax from a bank account would result in a 5.3% return after tax for a cash investor paying income tax at 47%.*

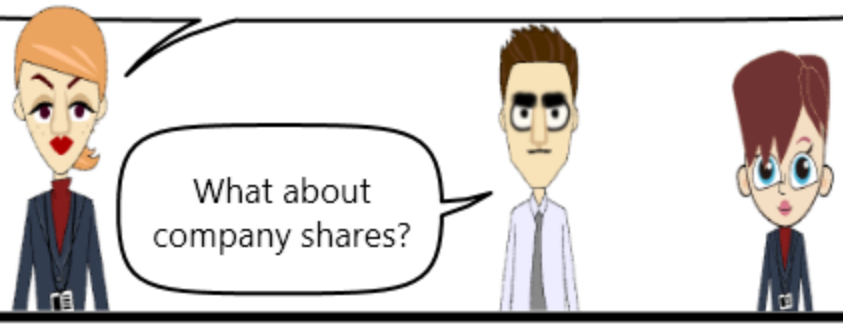
However, not everyone knows, Brad, that it is this same relationship between investor tax rate and pre- and post-tax returns that investment-neutral income tax design is seeking across all assets and liabilities.

Remember how you questioned the relevance of pre- versus post-tax discount rates, Brad?

Banks accounts are just a clear example of an investment whose income is taxed in the year it is earned at the tax rate of the cash investor.

And, withdrawal of account funds does not affect any of that.

What about company shares?



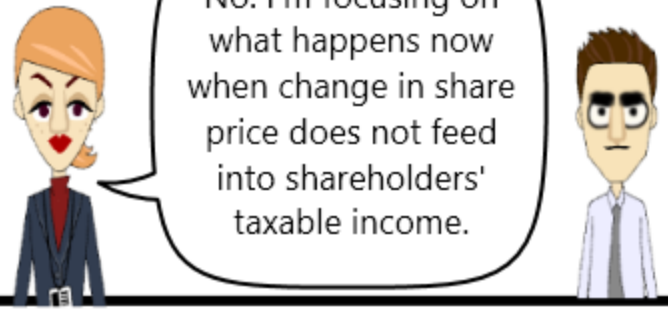
Thank you, Brad. Listed company shares, are another example of instruments with variable tax outcomes year by year.

Imagine a local company that simply invests in cash accounts to earn interest income.

Say, the company earns $100 of income per share in a year and, consequently, sees its share price increase by $100.

Aw, you're going to say tax that $100 accrued gain on each share!

No. I'm focusing on what happens now when change in share price does not feed into shareholders' taxable income.



* Mayo (2011), p 112-114.

Say, the $100 per share of company income is distributed immediately as franked dividends plus credits.

Like bank interest, this potentially variable annual income is shown in dividend slips year by year.

And, under our full imputation system, that income is taxed at the tax rates of local shareholders.*

But, unlike directly-held bank accounts, if the company retains the income and share price increases accordingly, existing shareholders are not taxed at all.

However, unlike directly-held bank accounts also, change in share value is important when dividends are distributed to shareholders.

That's because people buying shares just before the $100 distribution need to attract a deduction for the $100 capital loss realised if they sell shares ex-dividend - to avoid double tax.**

But we effectively only allow a deduction for half the loss.

Exactly, Brad.

Let's talk more about taxing accrued gains and upgrading imputation to integration.

No, dual income taxation.....

C'mon, focus you two!

Let's get back to other, more complicated, instruments with variable but directly-measurable annual income.

Like instruments whose annual income depends on varying parameters like the consumer price index, CPI, or share price index, SPI.

Let's illustrate this using indexed bonds.

Oh, yes. I always wondered how they should be taxed.

If we must.

* Ch2, p 5.

** Ch7, pp 5-7.

Indexed bond

Let's take a 5-year indexed bond which, at start Year 1, has a face value of $1000 that then increases year by year on the basis of increases in CPI during each year.

That means, with expectations of an on-going inflation rate of 5% a year, expected final capital payment on the bond would be $1276.

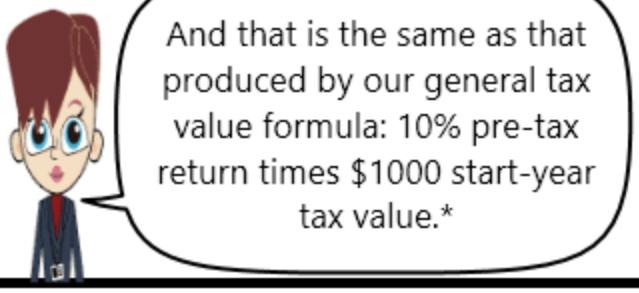
In addition, the bond provides annual coupon payments, or net receipts, at 5% of start-year indexed face value.*

So, in this case, annual coupon payments increase from $50 in Year 1 to $61 in Year 5.

With the face value of the bond increasing at 5% over each year and its annual net receipts set at 5% of start-year value, the bond's expected pre-tax return is 10% pa over the 5 years.

In a year, you could tax the 5% net receipts received plus the 5% change in face value that inflation produces.

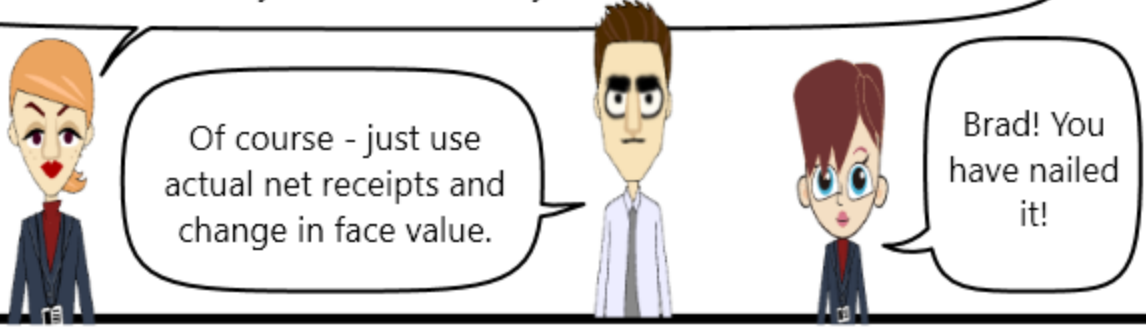
That would mean taxing $100 in Year 1.



Nice analysis, Sami, but there are a couple of practical angles that argue against getting taxable income from start-year tax value times return.

First, assumptions for tax purposes would be required about expectations either of inflation or overall pre-tax return from the bond.

Secondly, an unexpected change in inflation during a year would not be immediately reflected in that year's taxable income.



* Mayo (2011), p 123.

Annual taxable income must conform with the over-arching identity of net receipts plus change in tax value.

Changing inflation year by year - and, with it, increased tax value of the indexed bond - simply changes annual taxable income just like changing interest rates do with bank accounts.

So, 10% from inflation plus 5% coupons in one year might give way to 3% inflation and 5% coupons the next.

And, because income equals net receipts plus value change, regardless of year-by-year rates of inflation, pre-tax returns actually realised should be cut by income tax in proportion to the purchaser's tax rate - as would expected pre-sale returns drawing on the purchaser's inflation expectations.

Right on, Sami.

But, because inflation's effect on tax value applies to prior face value, I think you are assuming that the bond is purchased for its face value.

Yeah, Sami.

Your annual taxable income would not pick up any effects of purchases at a premium or discount to face value.

This is where a practical fix is needed, which I'm sure Brad will endorse.

Er, of course!

With a regular bond, future cash flows are known.

The amount paid for the bond, either initially or in the secondary market, feeds into computation of overall return and, consequently, annual taxable income.

Thus, taxing this taxable income **over the life** of the bond always sees expected pre-tax return cut by the tax in proportion to the investor's tax rate.

Changing interest rates will see computed tax value of the bond vary from actual value in years before maturity.

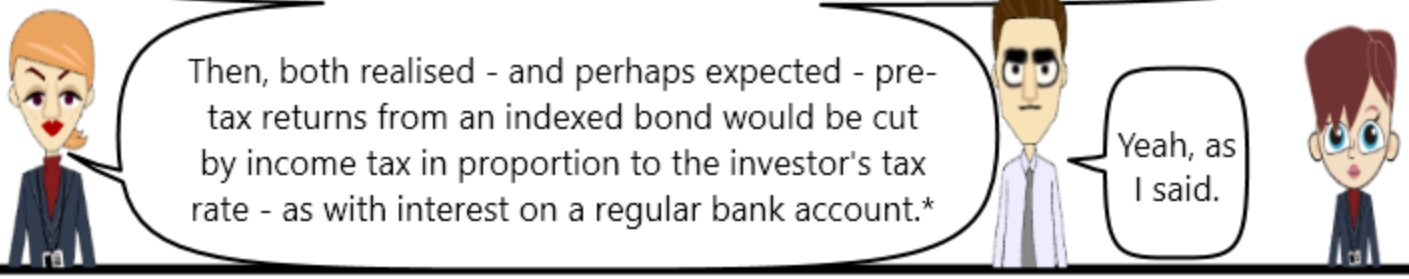
Sure, Brad, I'm just comparing the bonds.

All OK if we had its market value, Brad.

In contrast, with an indexed bond, the amount paid for the bond does not directly affect annual change in tax value of the bond.

As you described, Sami, each year's change in tax value and net receipts depend directly on the indexed face value at start of the year.

Consequently, when payment for the bond matches the bond's current indexed face value, annual taxable income neatly comprises each year's net receipts plus face value change - as Brad suggested earlier.



But taxable income comprising net receipts plus face value change would not reflect any discount or premium to current face value in purchase price.

That calls for an extra adjustment to annual taxable income. That could be obtained by using the interest rate needed to get from the price paid, with its discount or premium to current face value, to that same face value over the remaining period of the bond.**

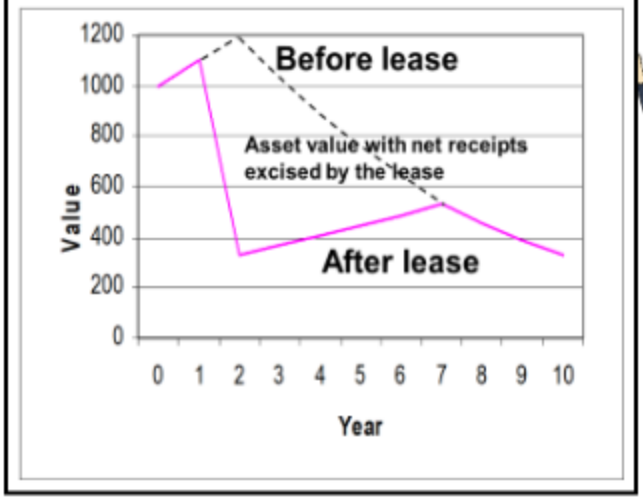
* Mayo (2011), p 125.

** Ralph (Legislation), p 147, Mayo (2011), p 127.

You know, guys, we have pretty much covered the principles involved in applying income tax to the assets and liabilities associated with leasing.

We did that when we looked at the tax treatment of that right over land....

....though the term leasing is often used when a right is involved over an asset that attracts tax depreciation, which does raise some extra issues.*



Here is the chart of a power station making 10% pa - a delayed cashflow asset that attracts tax depreciation when production starts in Year 3.**

$1b of up-front capital is invested and, pre-lease, value would increase until production starts in Year 3 after which value declines at 15% pa.

A "bite" of value is taken out of the asset when the owners lease the power station to another taxpayer from start Year 3 to end Year 7.

Of course, the "bite" of value lost is filled by payments from the lessee to the lessors.

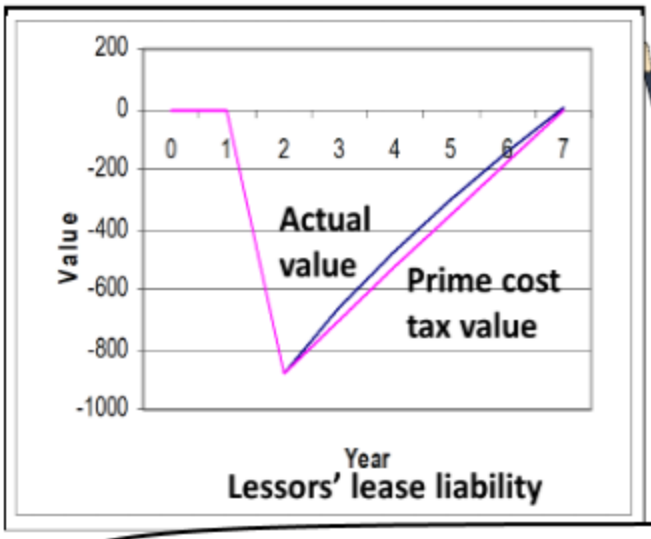
As we saw with the right over land.

At one extreme, a single up-front payment could be made for what the lessee sees as an asset.

The lessors, who still get the tax depreciation, accept the payment in return for not earning net receipts from the power station for 5 years.

* Ralph Review, pp 382-391.

** Mayo (2011), p 131.



The lessors accept $877m for the liability of allowing the lessee to work the plant over the 5 years.*

The lessors see that payment offsetting the lost 5 years of declining net receipts from the plant.

The lessors can seek to earn a return on that lump sum from alternative investments.

They are no longer taxed on annual net receipts from the plant but attract tax on the annual reduction in size of their lease liability.

Ideally, these annual reductions would be computed from the up-front $877m set against 5 years of negative net receipts no longer taxed.

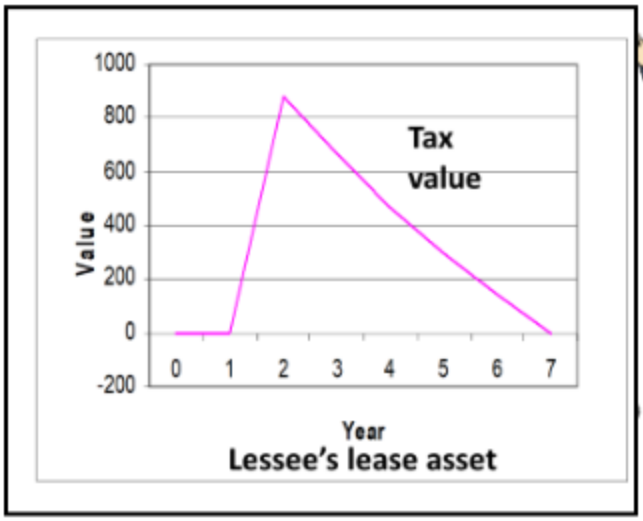
But, calculating annual tax value change would require estimating the negative net receipts and computing the associated interest rate.

So, in practice, the $877m of assessable income could simply be spread equally across the 5 years of the lease.

Oh, c'mon, Just tax the premium as a capital gain!

What, with matching lessee deduction?

Oh, no! That would be spread.



The lessee, who is taxed on the plant's net receipts over the 5 years, would be allowed annual deductions for the declining value of their lease - as Brad says.

This is the mirror image of the lessors' liability.**

And, in practice, reduction in tax value would again come from spreading $877m equally across the 5 years of the lease.

As I said.

* Mayo (2011), p 134-135.

** Mayo (2011), p 132.

Tax design gets even more interesting if, rather than investing the $877m elsewhere, the lessors fund the lessee's payment for the lease.

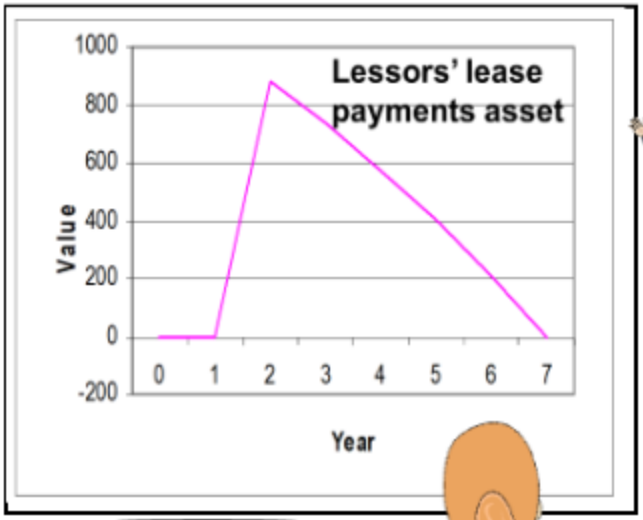
A simple interest loan would see the lessee paying interest every year before paying the lot at the end.

Alternatively, a single end-lease balloon payment would see the lessee's liability increase every year like Sami's block of land.

And a declining-balance loan could see annual repayments of $231m, which would reflect a 10% pa interest rate on the $877m loan.*

Oh, let me show what that looks like for the lessors and lessee.

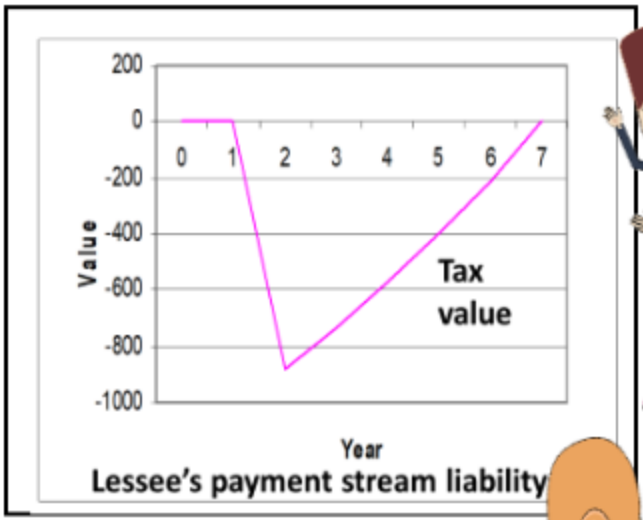
Deemed sale-and-loan treatment?



No, Brad. This shows the changing value of the lessors' stream of $231m lease rentals using a 10% pa interest rate.*

Key point is that, if the annual reduction in tax value of this asset is close enough to the annual reduction in size of the lessors' lease liability, the net effect on the lessors' taxable income is just the assessable annual lease rental receipt.

Nice one, Sami.



And this is the mirror image of that: the changing value of the lessee's lease rental stream liability.**

Key point is that, if the annual reduction in the size of this liability is close enough to the annual reduction in tax value of the lessee's lease asset, the net effect on the lessee's taxable income is just the deductible annual lease rental payment.

Deductible/assessable lease rentals - what's new?

* Mayo (2011), p 132.

** Mayo (2011), p 136.

Brad, overall tax treatment of lease rentals assessable to the lessor and deductible to the lessee is a convenient special case.*

A special case that applies when lease rentals are close to net receipts of the underlying asset.**

Outside of that case, the annual changing values of all the assets and liabilities of the players should be taken into account.

Why go to all that trouble?

Look - say, the lease rentals happen to match the annual net receipts from the power station.

As with the right over land, the lessors pay the same tax as if they had not leased at all.

And the lessee pays no net tax at all on the deal.

So, why worry too much about tax design?

Having tax design reflect changing values of relevant assets and liabilities as much as possible is critical to minimising its impact on people's decisions.

That includes leasing versus borrowing to buy and other financial arrangements that grease business activity.

In fact, poor alignment of tax values and actual values with physical assets can lead to the use of leasing for tax planning purposes.

Yeah, as I said, leasing is a tax rort.

In the past, for example, tax-exempt government entities sold and leased back assets like power stations to tax-paying companies.

The companies could access accelerated depreciation and investment allowances on the assets and pass those benefits on to the tax-exempt entities through reduced lease rentals.

* Ralph Review, p 382.

**At margin, annual user cost = interest charge + value change.

Wasteful activity and lost tax revenue was the result.

Just treat the lease as a sale and loan* so that tax exempts, then treated as "owners", attract the accelerated write-off, which they can't use.

That has been tried, as has complete denial of depreciation deductions, in these circumstances.**

The ideal solution, of course, is to remove the fast and higher write-off provisions.

And to treat leases within the general framework for taxing financial arrangements.

Even then there would be the problem of different tax rates applying to the lessor and lessee.

Brad, that is no more of a problem than different tax rates applying to borrowers and lenders.

Aggregate tax revenue is not the litmus test of neutral tax treatment of leasing or borrowing.

That test is reserved for the proportional tax rate wedge between pre- and post-tax return - or unchanged NPV - both of which depend on getting tax value close to actual value.

But, as we saw with leasing of the power plant, estimating value change is made difficult because net receipts are unknown up-front.

We solved that there with straight line write-off. And, net receipts **are** known when rights are bought or sold over some or all of the known cash flows of a financial arrangement.

With that in mind, let's look at the selling of a local bond's future payment before we do a wrap up of local financials.

I can feel the general tax value formula coming on.

* Ralph Review, p 389.

** Ralph Review, pp 392-398.

Capital repayment assignment*

Say, at start Year 1, a taxpayer buys for $1000 a bond with $1000 face value and 10% annual coupons.

The $1000 face value, plus the final $100 coupon, is paid at end Year 5.

The taxpayer on a 47% tax rate pays $1000 for the bond because the 10% pre-tax, and 5.3% post-tax, returns match those available elsewhere at similar risk.

The taxpayer decides to accept an offer from another and sell the $1000 Year 5 capital repayment at start Year 2 for $636.**

The $636 is acceptable to the seller for the liability to provide $1000 later because interest rates have increased and the seller can earn 12% on the $636 at similar risk elsewhere, lifting it to the $1000 to be paid in Year 5.

Thus, the annual size of the liability to the seller increases year by year, reducing the seller's taxable income by $364 overall ($1000 less $636).

Yes, opening value times 0.12 each year or -$76, -$85, -$96, -$107.**

And, the buyer of the capital repayment has an asset increasing in value year by year in a mirror image.

So the buyer's overall taxable income increases by $364.

Right on, Sami.

So, if the buyer and seller were both on a 47% tax rate, overall tax revenue would be the same as with no assignment - ignoring tax effects of the seller investing the $636 and the buyer borrowing to pay for it.

But regardless of tax rates, both seller and buyer would have the assignment's 12% pa return cut by tax in proportion to their respective tax rates.

But, if the assignment were acquired by a series of payments, we could deal with associated assets and liabilities.

Brad's got it!

Great! Let's have a brief look at hedging before summing up financials and moving to international.

* Ralph Review pp 356-361 (part disposals).

** Mayo (2011), pp 142-143.

Hedging

Hedging may involve the use of financial instruments, like futures and options, to lock in a future price.*

That future price may be, say, for a tangible asset or for commodities produced by tangible assets - or, may relate to other financial arrangements.

Whether or not the hedging instrument and hedged item are legally linked, we have to manage the two sides of the hedging arrangement.

Take, for example, a miner who expects to be producing a quantity of ore at year's end. In **June**, the miner wants to lock in the current ore price, which is matched by its year-end futures price.

The miner sells sufficient futures contracts for the ore to cover all of the miner's production.

At year's end, if the ore's market and again aligned futures price is below the **June price**, after-tax 'losses' from sales would match after-tax gains from futures.

In this simple within-year example, the miner gets the **June price** for his ore.

But often, use of futures would come years before the ore sales, requiring many futures contracts with changing prices and year-by-year losses/gains on the contracts.

And there could be quite different tax treatment of these year-by-year losses/gains and the future sale of ore.

To have a tax-neutral effect on risk, the gains/losses on the futures would have to be rolled forward to the time of ore sales - with tax status aligned.

Not if we taxed the annual accrued gain of the ore as sales became closer.**

Sami, here we are outside our mark-to-market regime and are not looking at taxing accrued gains.

Matching tax and the timing of gains and losses across each side of hedges has to balance: on the one hand, the potential non-neutral treatment of hedging instruments and tax revenue losses; and, on the other, the need to ensure tax does not get in the way of sound risk management.

Our rules for such matching may be somewhat burdensome, though linking them to accounting rules could help.

But they aim at facilitating risk management. And, they must address tax exploitation, such as the manipulation of the timing of gains and losses or adverse selection, associated with deferral of hedging instrument gains/losses past the time of their realisation.***

* Ralph Platform, pp 170-173, Ralph Review, pp 350-351.

** Ch4, 29-31.

*** Australian Parliament, pp 261-270.

Wrap up of the team's look at financials

Now, moving on. Remember, as with other asset categories, the Tax Minister wants to see how financials fit within a redesigned tax code....

....with specific reference to rights and leasing.

Exciting!

First, I want to put into perspective the somewhat limited range of financial arrangements that we have discussed so far.

And then briefly sketch out a design structure for financial arrangements that could blend in with a principles-based redesigned tax code for taxing investment income.

We have covered a variety of arrangements from rights over physical assets through to assignment of specific cash flows of a financial asset.

But there are a myriad of other arrangement for a variety of purposes. There are, for example, swaps* and forward rate agreements that reduce the risk of future interest or exchange rate movements.

We have just looked at instruments like futures and options used to hedge the risk around returns from physical assets or financial assets and liabilities - and how it is possible to use such regular instruments to achieve almost certain returns.

And, many such instruments are continuously traded in their own right in open financial markets.

A common theme in all of this is time and money. And that fits right into a redesigned tax code where taxable income comprises **net receipts plus annual tax value change** of investment assets and liabilities.

And, Sami, market valuation evokes our prior discussions on the relevance of loss offsets** and concerns Brad voiced over people paying tax on income they have not received***.

Yeah, Sami

Yes, and it's a stand out to **align end-year tax value with market value** where possible. Regardless of how uncertain end-year value might be up front, alignment would see annual post-tax return achieved equal to pre-tax return cut by the taxpayer's tax rate.

* Ralph Platform, pp 187-188.

** Ch4, pp 23-24.

*** Ch4, pp 14-20.

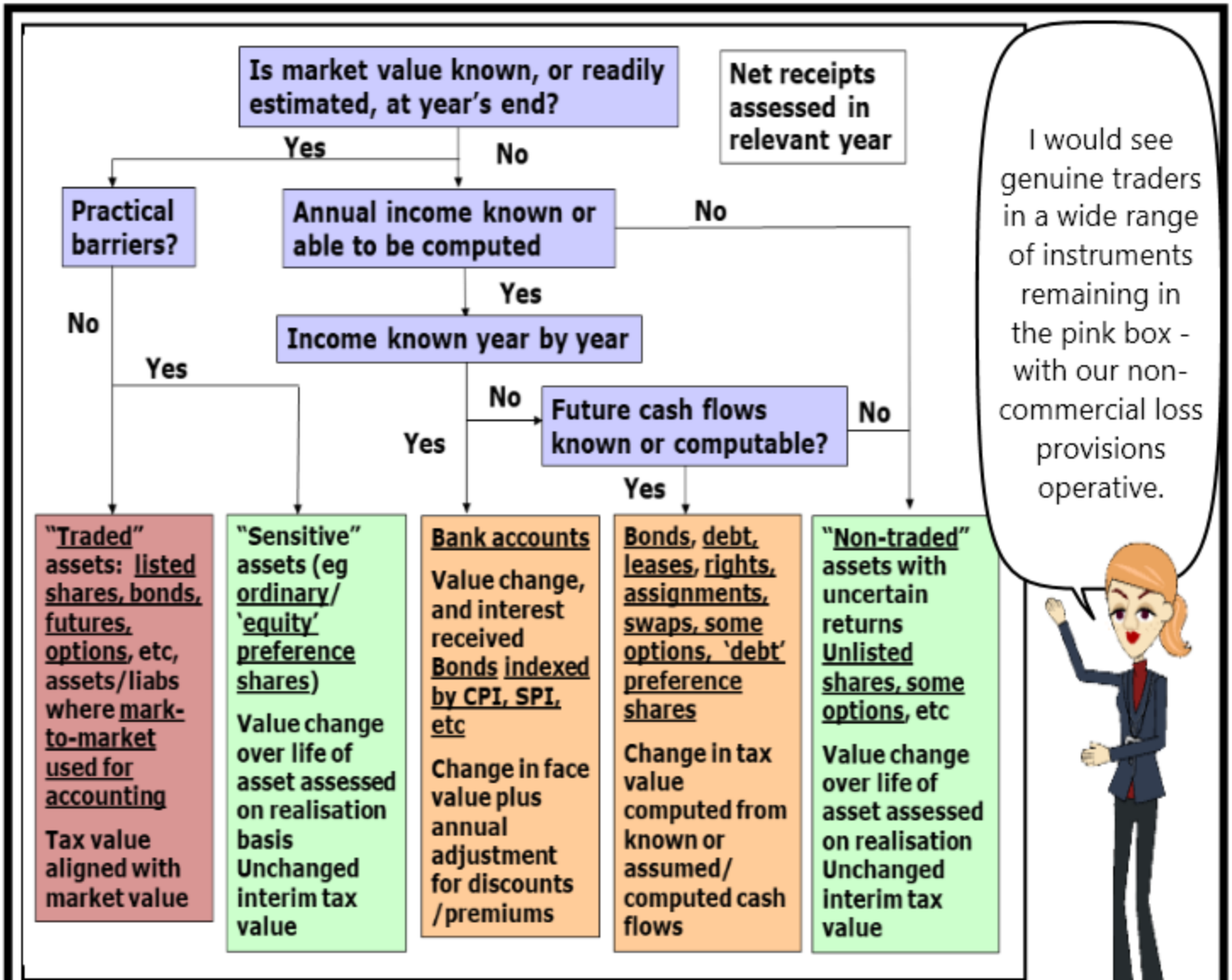
What I want to present to the Tax Minister is high level practical treatment of financial arrangements in redesigned tax code focused on changing annual tax values.

I am not attempting to present a comprehensive legislative framework for such taxation as many countries, like Australia*, do have.

Nor am I attempting to resolve the issue of taxing accrued capital gains.

Thus, I have had a go at a **tax value** design tree for financial arrangements.

In the design tree, tax values for an arrangement depend on certainty of future cash flows**, ease of value measurement and practical sensitivities.



I would see genuine traders in a wide range of instruments remaining in the pink box - with our non-commercial loss provisions operative.

Surely we are not going to rework current law that took years and years to develop.

All taxpayers treated the same. And, I like the design in the pink box. But presumably CGT continues to apply to, say, listed shares in the adjacent green box.

* ATO (2023), with prior considerations in Wood (2001).

** See Wood (2001), pp 78-80.

That's right, Sami, where assessing value change on realisation remains, CGT loss quarantining design is essential - though the CGT discount is another question altogether.

Now, on your earlier question, Sami, you see in the design tree that tax values of preference shares would depend on whether they are classified as being like "debt" or like "equity".*

As now, the classification would depend a lot on how sure or non-contingent future benefits of the instruments are on the issuer's decisions or future share price.

Say, converting preference shares pay dividends that are set at a percentage of issue price but depend on issuer's profitability, and conversion to shares occurs at a fixed date regardless of share price. This might be regarded as equity-like.

Similarly, convertible notes might pay debt-like coupons but convert to the issuer's shares at an uncertain price.

In contrast, say, redeemable preference shares pay dividends at a set percentage of face value before any regular dividends can be paid and are redeemed by the issuer at face value after a few years. This might be regarded as debt-like.

Clear classification rules are needed based on the the degree of certainty of instruments' cash flows.

Now, working through the design tree, if these instrument were traded and tax value could be aligned with market value, Sami's pink box design would neatly capture them all.

Hmm.

Nice!

But, say, sensitivities did not allow alignment of tax and market value of an equity-like preference share it would attract the green box treatment with tax value unchanged at initial cost until conversion or redemption.

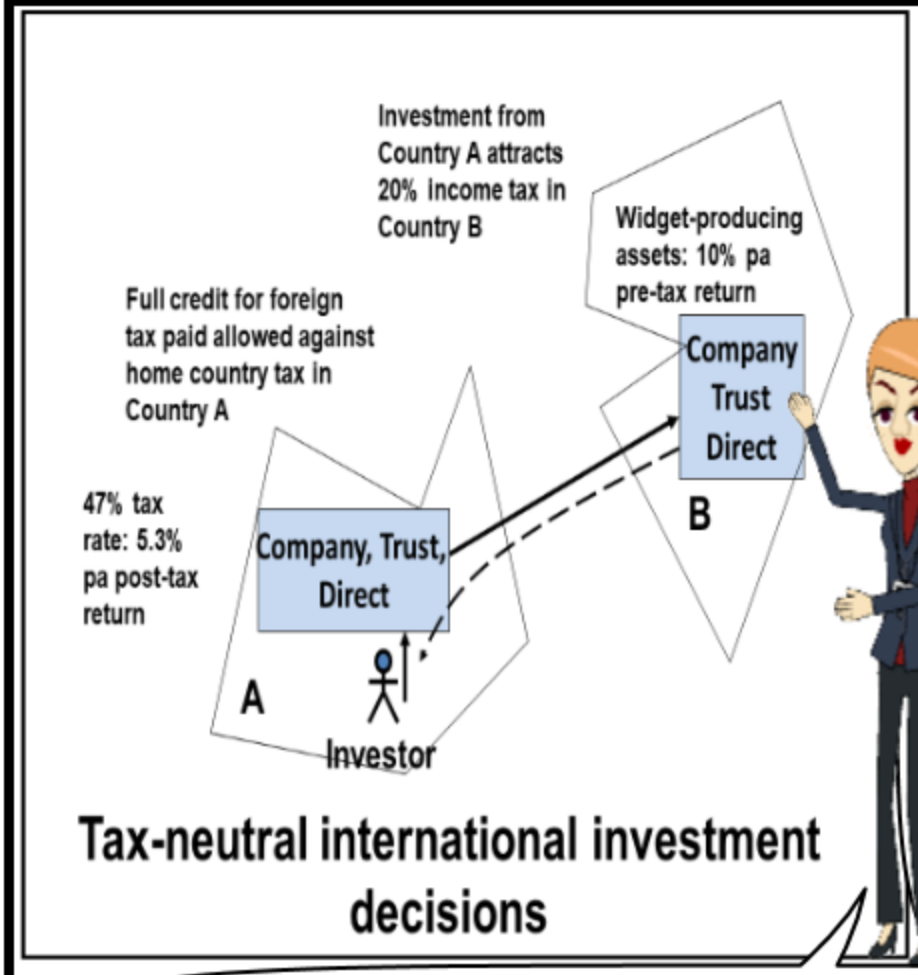
And, if a debt-like preference share were not traded, its year-by-year tax values could be computed from its known future cash flows as per the right-hand brown box.

OK. Let's finally move on to the international scene.

Hybrids mix debt and equity.

I'm really looking forward to this!

* See Wood (2001) pp 80-83 for debt/equity discussion.



Here we have our local, Country A, investor on a 47% tax rate putting his money into widget production in Country B.*

Investment may be direct or via companies or trusts from A then direct or indirect to widgets in B.

For indirect investments through Country B trusts, current-year income could flow back to our local investor. But, the timing of investment flows with investments though Country B companies would depend on Country B's company tax design.

In any case, we are focused here on **direct** outwards investments in foreign financial assets. So, take a direct investment in widgets in Country B by a resident of Country A - individual, trust or company. The investment produces a 10% pa pre-tax return which is taxed at 20% in Country B.

If Country A provides a full, refundable credit for the 20% foreign tax, our local investor pays a net overall 47% tax on the foreign income.

Currency movements aside, with tax-neutral design** applying in Country A, the investor earns 5.3% after tax on the investment, exactly the same post-tax return available on a local investment earning 10% pa before tax.

Wow, Claudia that all fits with what I said in the TV interview. Integration design for local companies is essential to achieve your investment-neutral outcome.

And, integration design for foreign companies with mutual recognition of design between countries would see worldwide investment neutrality.***

Well, let's get back to reality from this tax ideology. What about tax revenue cost of full foreign tax credits for one?

And, what about exchange rate effects?

But, I do note that current-year foreign income could be taxed here under our anti-tax-deferral regime.

What's that regime?

* Adapted from Mayo (2011), p 261.

** Ch1, pp 16-17.

*** Ch2, p 32.

Foreign bonds and bank accounts

We will look at anti-tax-deferral arrangements later,* Sami.

Right now, Brad is right to emphasise the relevance of exchange rate movements to investments offshore.

How can pre-tax returns be cut by income tax in proportion to investors' tax rates when exchange rates are moving all over the place all the time?

Great question, Brad, which raises the key related question: how are the annual tax values of a local investor's foreign investments treated in tax returns here when the relevant spot exchange rate is continually changing?

We would, of course, convert to home dollars, purchase and sale prices and net receipts of investments in other countries.

But what about year-by-year tax values of, say, a zero-coupon bond or a regular coupon bond?

To analyse these questions, I'm going to have an investor here buy at start Year 1 a foreign 5-year, 10% coupon bond with a foreign dollars F$1000 face value. The investor is not taxed on a mark-to-market basis.

The bond pays out F$100 at end of each year, which is withdrawn as "net receipts" in our terminology, and the F$1000 at end Year 5.**

The investor is happy with the 10% coupon rate given local interest rates and risks involved.

Those risks include an expectation, reflected in forward exchange rates, that the rate of exchange of home country dollars (H$) for foreign dollars (F$) will appreciate by 2.5% pa over the 5 years of the bond.

* Ch6, pp 31-40.

** Mayo (2011), p 147.

So, with the exchange rate initially at parity between here and the country offering the 10% coupon bond, our investor is happy to pay H$1000 for the F$1000 foreign bond at Start Year 1.

And the 2.5% pa expected exchange rate appreciation means the F$/H$ exchange rate is expected to go from 1 at start Year 1 to 1.025 at end Year 1, and so on to 1.1314 at end Year 5.

And we know the F$100 coupon receipts received each year, and the final F$1000 payout will be converted to home dollars at the spot exchange rate.

And I've got a simple solution.

Annual taxable income in foreign dollars is F$100, even if interest rates change, right?

Then we need to do no more than convert the F$100 to local dollars at the spot exchange rate when it is paid - as you have already said.

Unfortunately, Brad, that ignores exchange rate effects on the tax value of the capital invested.

Sure, ignoring interest rate effects as usual, the annual tax values of the bond in foreign dollars stay at F$1000.

But your approach just assumes this F$ tax value is converted at parity to be H$1000 each year until final payout of face value is converted at the Year 5 exchange rate.

Let's say the F$/H$ spot exchange rate does, in the event, appreciate in line with the 2.5% pa appreciation of up-front forward rates

Then, certainly, the F$100 of net receipts paid at the end of each year will decrease in H$ from $97.6 - or $100/1.025 - at end Year 1 to $88 - $100/1.1314 - at end Year 5.

But the constant annual F$1000 tax value will also decrease steadily from an end-Year 1 H$975.6 to end-Year 5 to H$884, which matches H$ face value payout at that time.

The reduction in H$ tax value in Year 1 is therefore H$24.4.*

That means local taxable income for Year 1 is not H$97.6 but H$97.6 less H$24.4, or H$73.2.

Yes, net receipts plus change in tax value.

Oh, that again!

Now, let's try attacking this by starting with the bond's H$ pre-tax flows.

That is, annual net receipts going from H$97.6 in Year 1 to H$88 in Year 5 when the H$884 face value is also received.

Given the up-front outlay of H$1000, these cash flows equate to a pre-tax return in H$ of 7.32% pa.*

This is lower than the foreign 10% pa, consistent with the expected local currency appreciation.

Hey, I've got it!

The H$ flows are now just like any local bonds with known future flows.

Nice thinking, Sami.

Oh, these purists!!

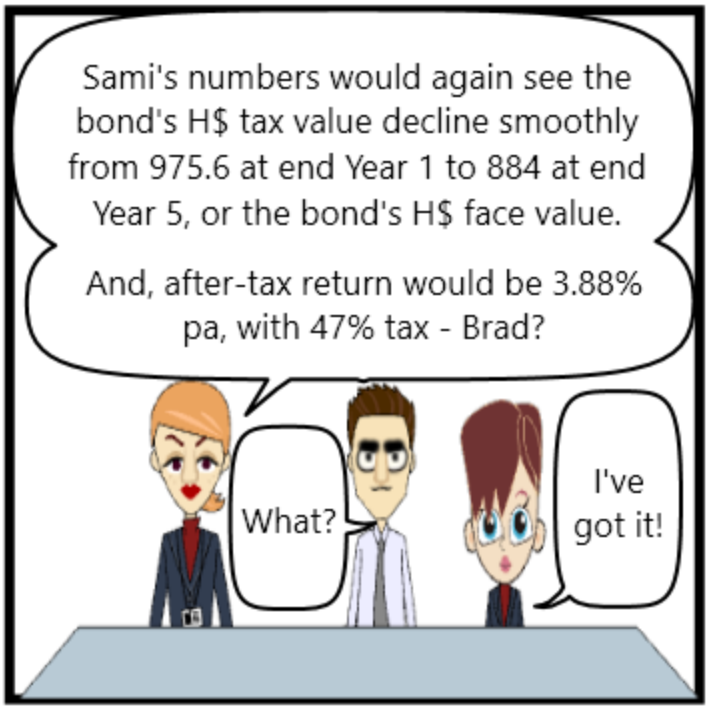
So, H$ taxable income is just opening H$ tax value times 0.0732, or H$73.2 in Year 1.

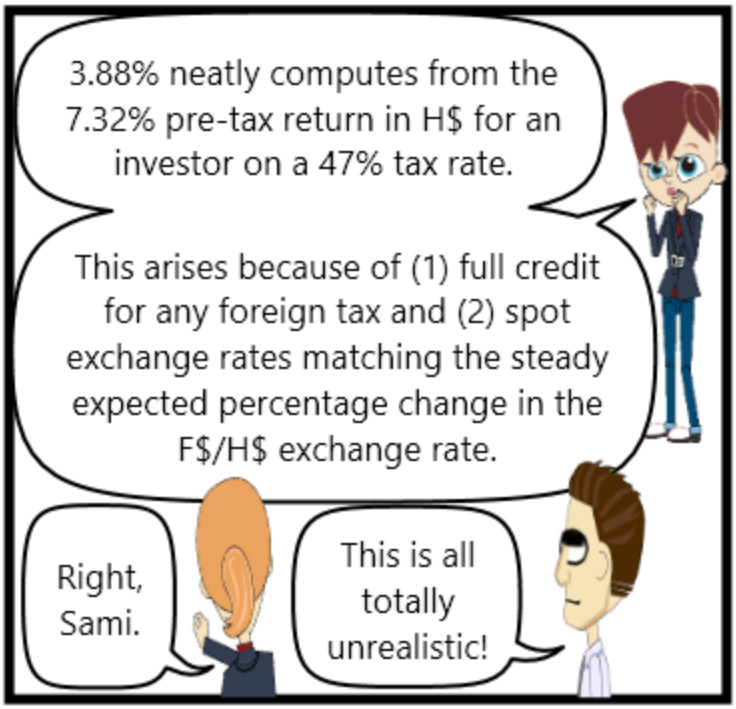
Then our tax value formula gives us H$976.6 for tax value at end Year 1:
975.6 = 1000 + 73.2 - 97.6

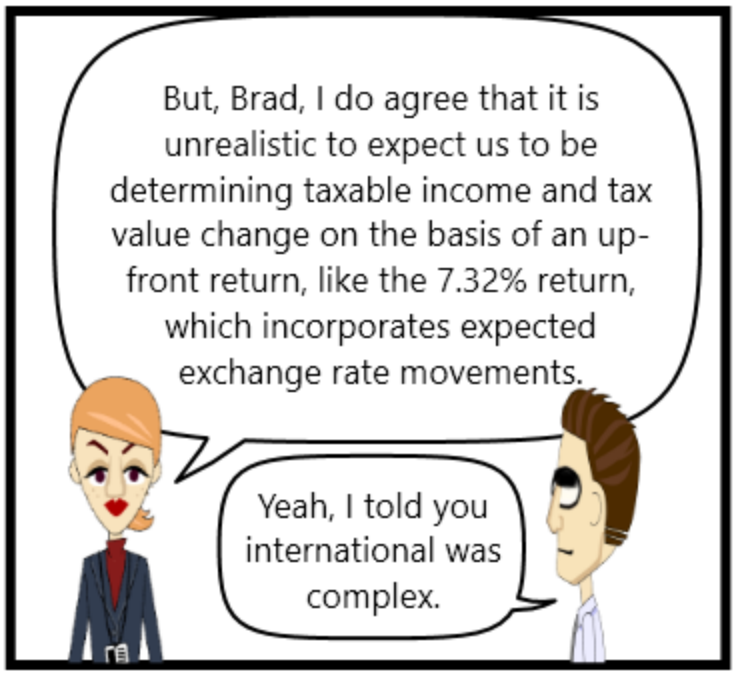
Nice analysis, Sami.

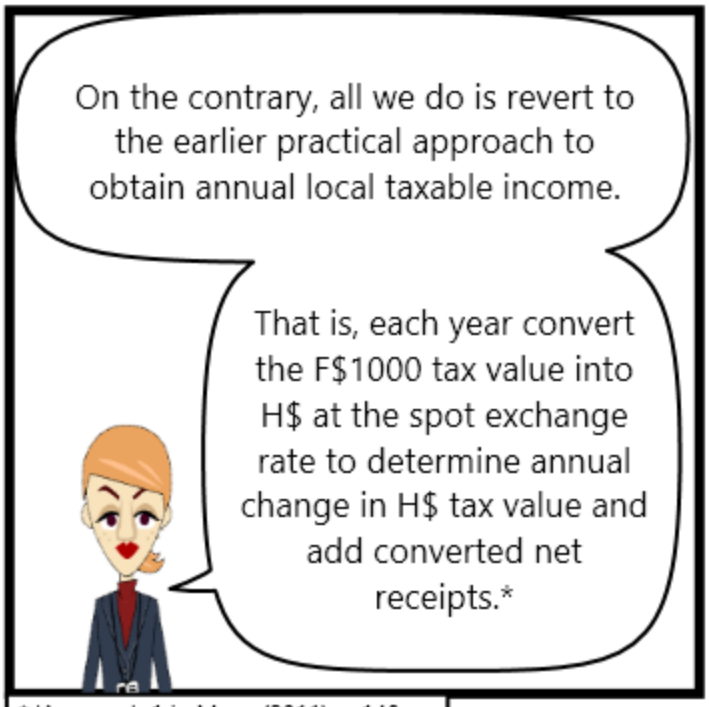
Got to be joking!

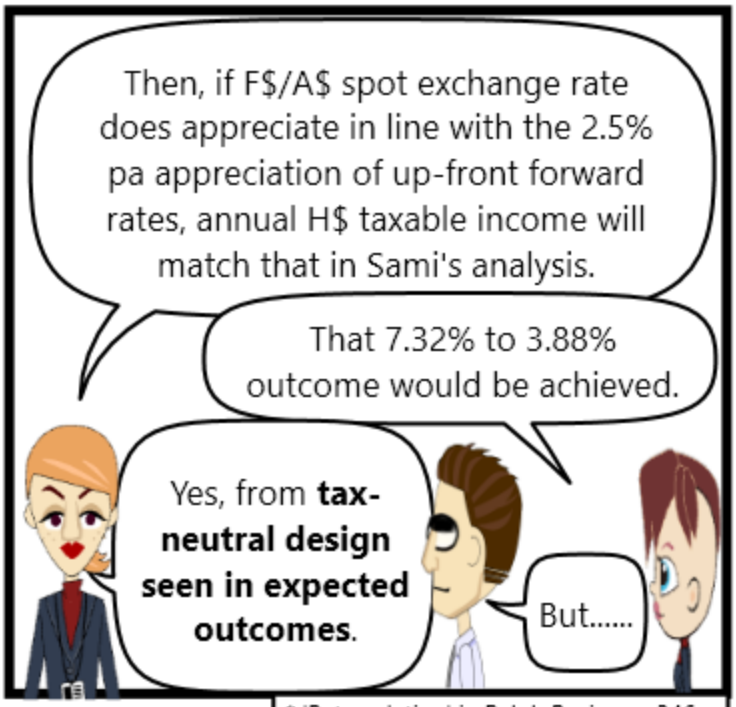
* Mayo (2011), p 147.











* 'Approach 1 in Mayo (2011), p 148.

* 'Retranslation' in Ralph Review, p 346.

Practical design for currency conversion

So, the general prescription is to **convert F$ tax values** from our law at spot exchange rates to obtain annual change in H$ tax value and **add any converted net receipts**.

Take, for example, a **discounted foreign zero-coupon bond** offering a 10% pre-tax return - $F1000 to $F1611 in Year 5 - with expected 2.5% pa $F/$H increase.

Taxing computed annual F$ accrued gains converted to H$ - 73, 79, 84, 90, 97 - would see the local 7.32% return cut by 47% tax to 3.88%.

Foreign tax credits aside, unexpected exchange rate movements will occur during all these investments.

Say, the actual F$/H$ exchange rate is as predicted at the start and end of your bond. Then, local start and end tax values, and thus total tax paid, will be unmoved by interim exchange rate movements.

But imagine the effect on the profile of the investor's yearly tax payments if a large unexpected exchange rate depreciation upsets your schedule of expected exchange rate movements just for one year.

Tax payable would increase significantly in the year of the depreciation, followed by a large tax loss the next year.*

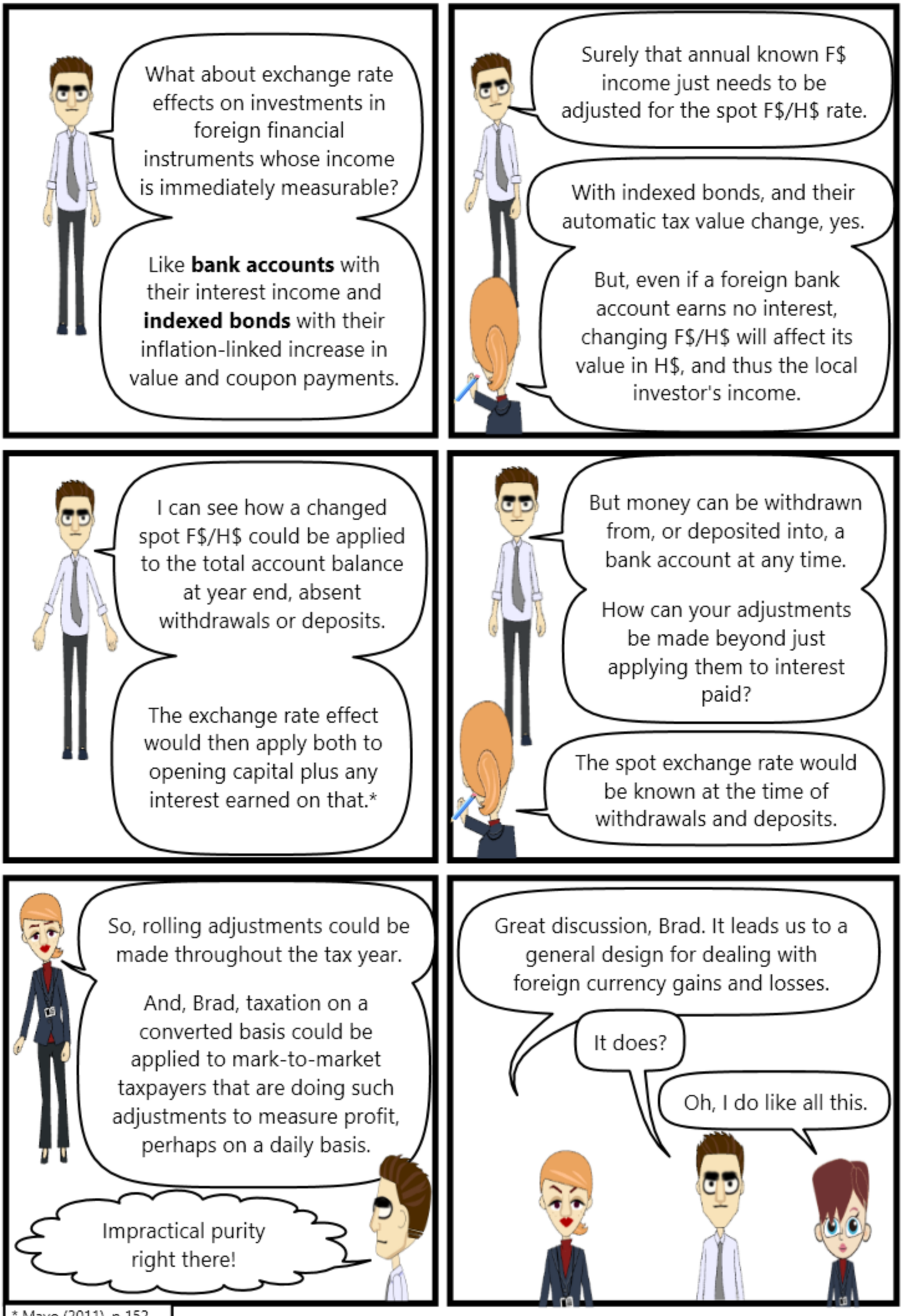
Locking in up front the exchange rate schedule to be applied to the bond, say, at opening spot rate, would avoid such violent tax fluctuations.

But, Brad, the profile of tax payments would be out of kilter with reality and tax neutrality.

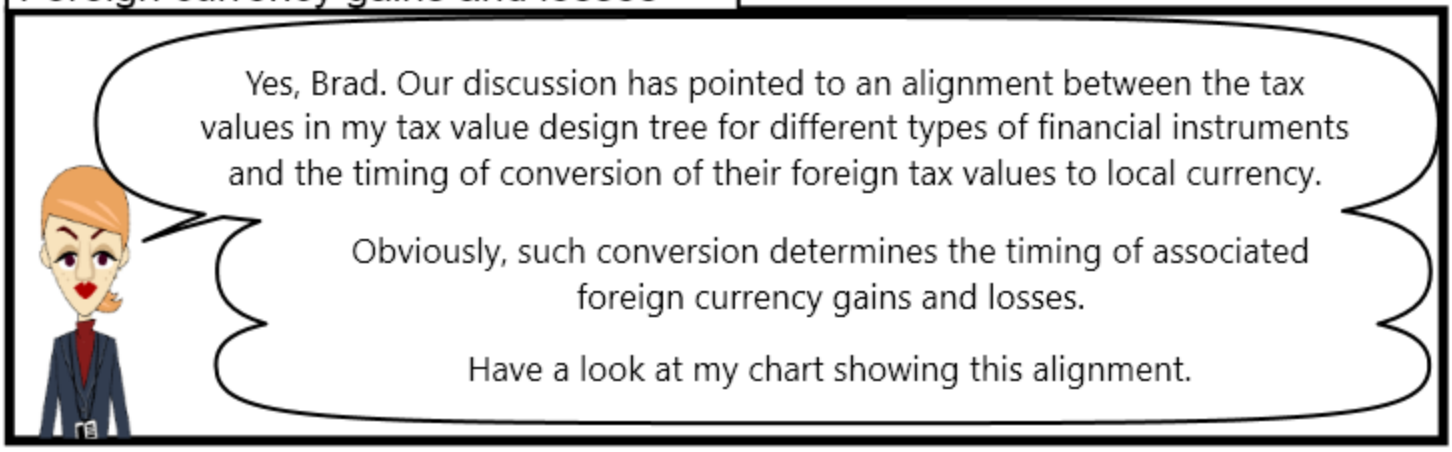
And, what you describe are the usual risks that investors may hedge against.

Hedging gains and losses included in their tax assessments could offset the variable tax effect of these risks.

* Mayo (2011), p 150.



* Mayo (2011), p 152.



Traded assets/mark-to-market treatment

Conversion applies when tax and market value aligned

'Sensitive'/non-tradable assets (eg foreign equities)

Conversion applies when assets assessed on a realisation basis

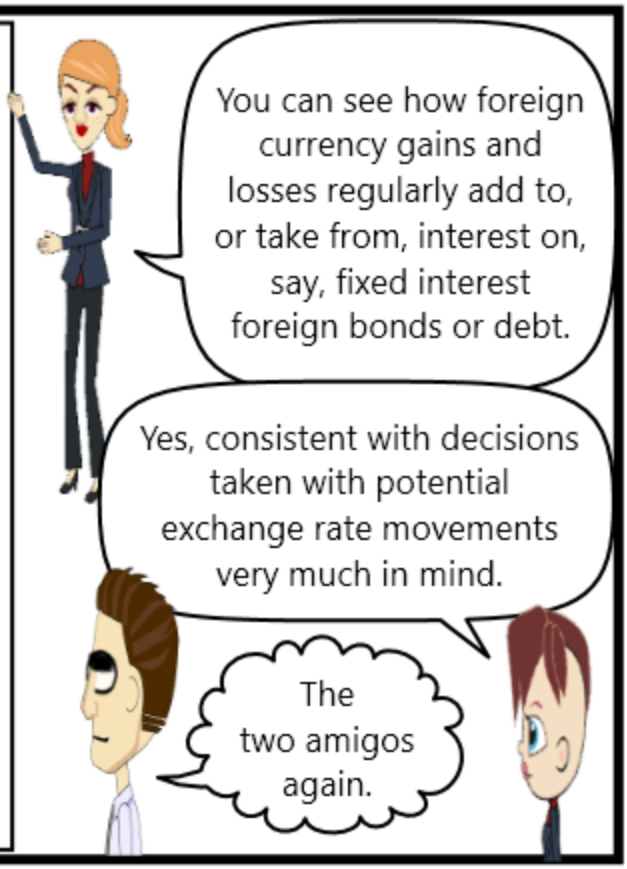
Assets/liabilities with tax values computed from known flows (eg fixed interest bonds or debt)

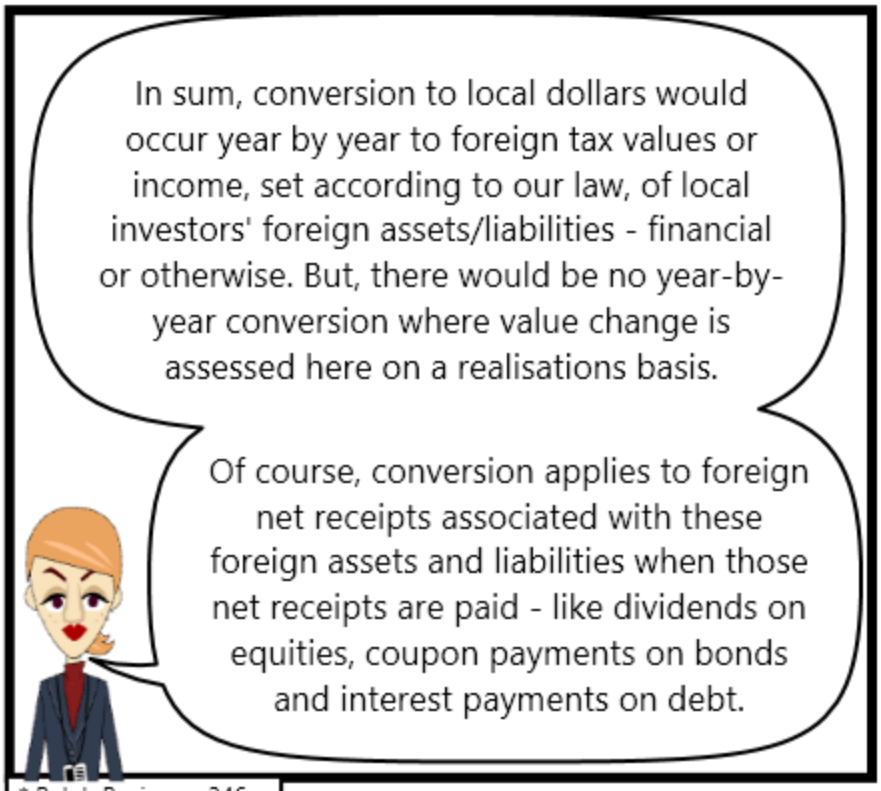
Conversion applies to computed year-end/disposal tax value (translation basis*)

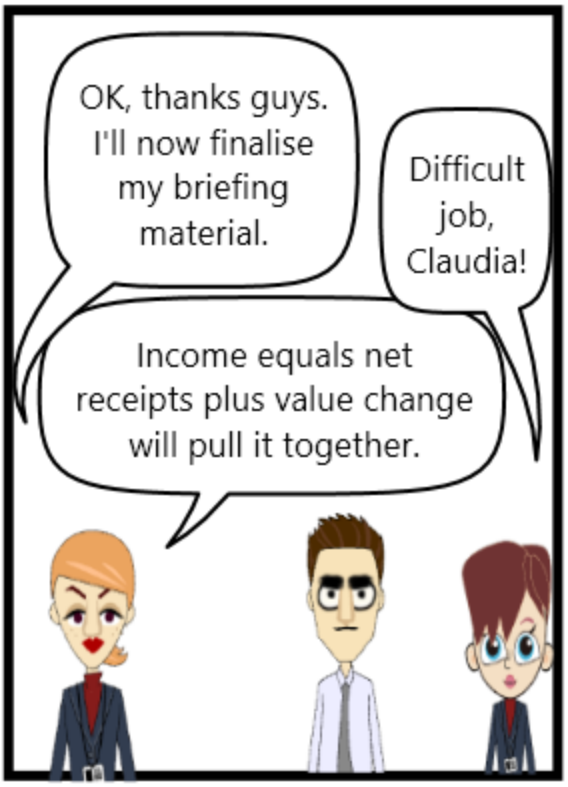
Assets with known income year by year

Bank account: conversion when transactions occur

Indexed bonds, etc: conversion applies to income at year-end

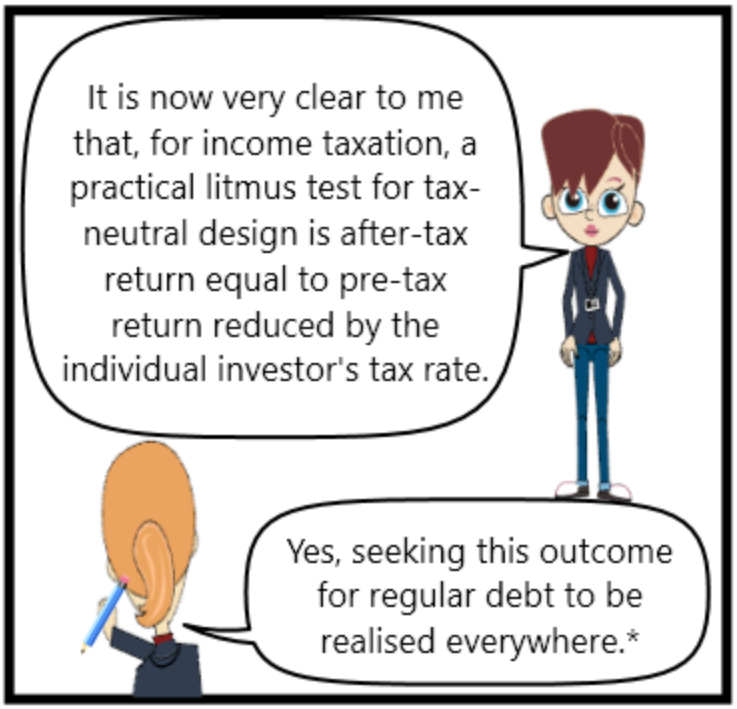




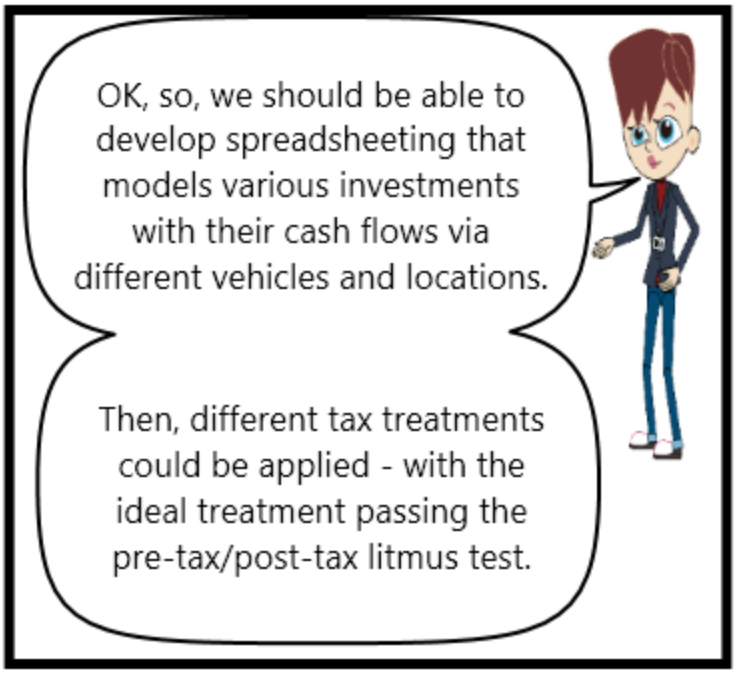


* Ralph Review, p 346.


Sorry to interrupt, Claudia, but I've been thinking.
Yes, go on.


It is now very clear to me that, for income taxation, a practical litmus test for tax-neutral design is after-tax return equal to pre-tax return reduced by the individual investor's tax rate.
Yes, seeking this outcome for regular debt to be realised everywhere.*


And that outcome is ideally achieved regardless of whether the individual invests direct or via entities like companies or trusts.
Or invests locally or in other countries.
Yes, you've got it.


OK, so, we should be able to develop spreadsheeting that models various investments with their cash flows via different vehicles and locations.
Then, different tax treatments could be applied - with the ideal treatment passing the pre-tax/post-tax litmus test.

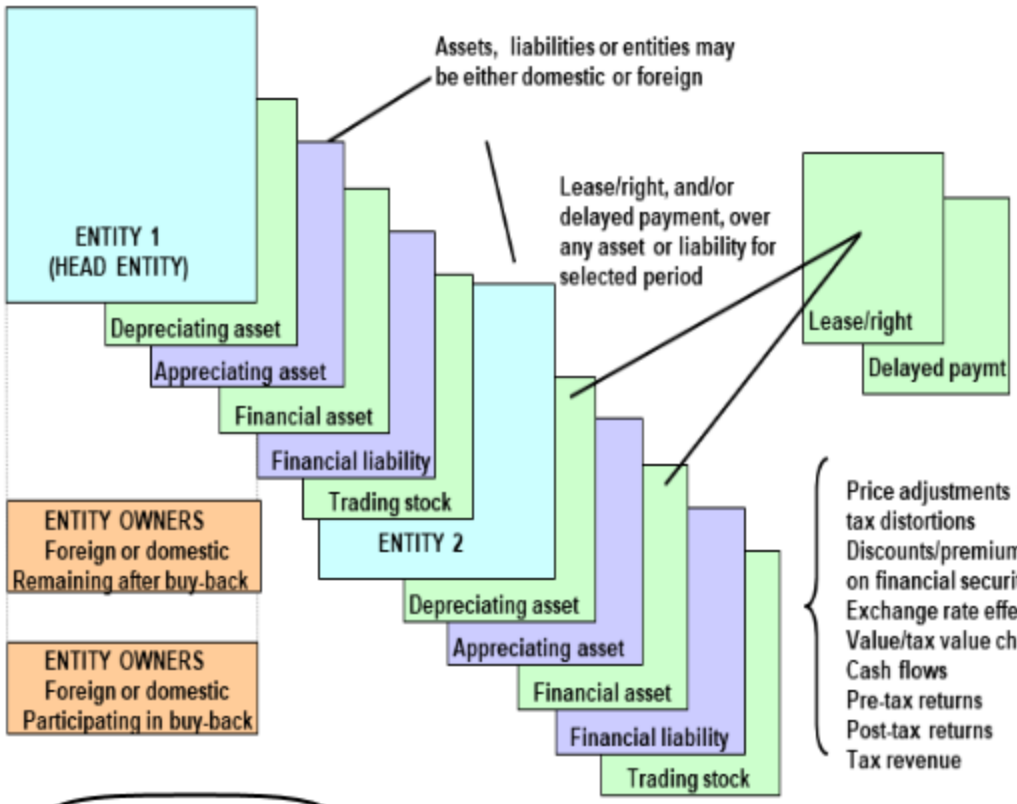

Nice thinking, Sami.
And I've got good news for you.


The Australian Treasury owns a cash flow model, the Kyscope, that does exactly what you suggest.
Wow!
Let me show you.

* Ch1, pp 10-11.

Kyscope

A kaleidoscope of business income taxation that integrates all facets of investment activity



The coloured boxes show the linked spreadsheets of the model.*

Wow!

I reckon if we can't show the operation of the income tax law using such a model there's something wrong with tax design.

In fact, the law itself could be the coding underlying the spreadsheets.

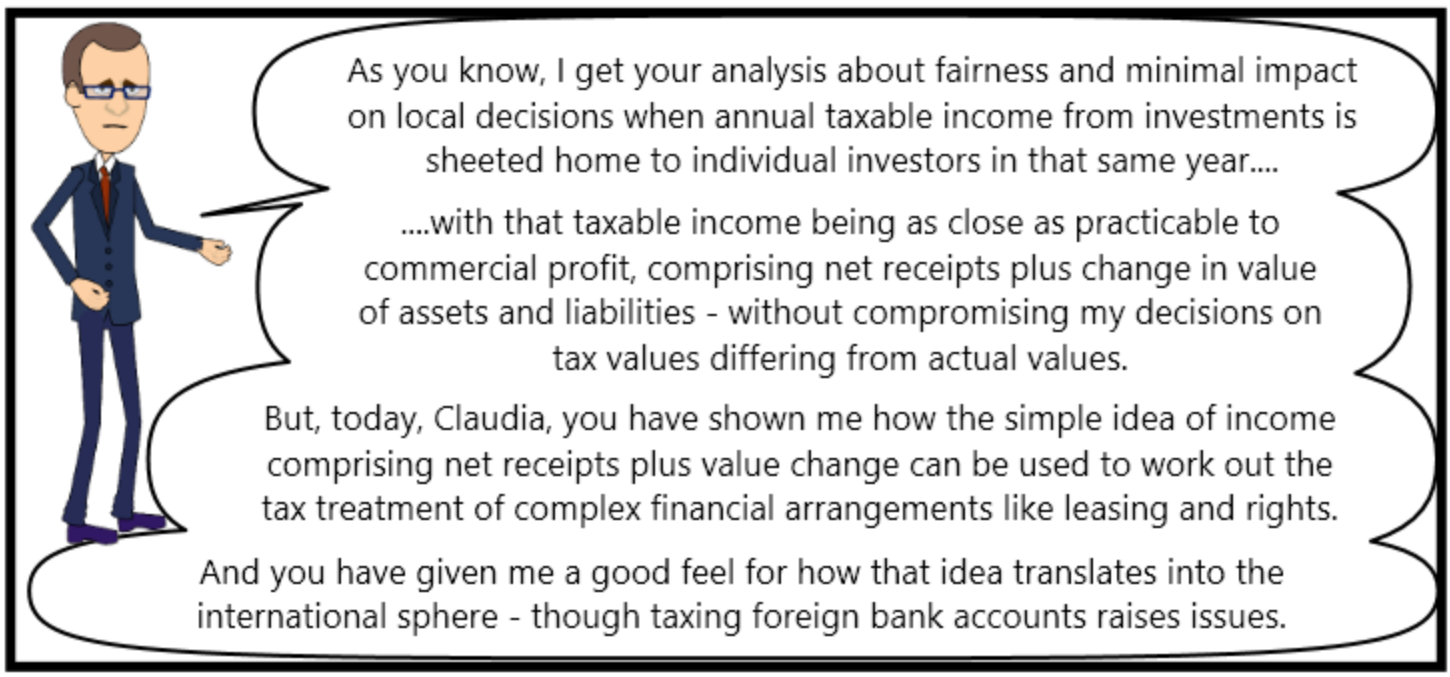
Woow!

I like your enthusiasm, Sami, but I must get on with preparing for the Tax Minister's briefing.

Enthusiasm's good, I hope.

* Further description at: www.kyscope.com.au.

The big day has finally come: the actual briefing for the Tax Minister



The team debriefs.....