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Financial Product Design, Retail Investor Sophistication, and Issuer Incentives: A Case Study

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ABSTRACT

This paper presents a case study of a recent financial product, Converting Preference Step Up Units, offered to Australian retail investors which illustrates the inherent tension common between structured product design and retail investor financial sophistication. It is argued that an apparently relatively simple design hides sufficient complexity to make it highly unlikely that retail investors (or their financial advisers) would be able to correctly value the product or assess the risks involved. The design also creates conflicts of interest for the issuer. This raises the critical question of what motivates the design and issuance of such a financial product and whether it would fall foul of ASIC's soon to be legislated banning powers.

A common theme in financial consumer protection is the issue of a fundamental mismatch between the design of structured products and the ability of retail investors (or their advisers) to understand the risk-reward trade-off involved. This paper examines one such structured product to illustrate that issue and the resulting potential conflicts of interest for the issuer of the product. It does not suggest that investors were deliberately misled by the issuer, nor that they have necessarily made a bad investment.

Another theme in the financial engineering literature is the potential (private, if not social) value added created by the design of structured products which create previously unavailable investment opportunities (including risk-reward combinations) by arbitraging market imperfections, reducing transactions costs, tax avoidance/arbitrage, or regulatory arbitrage. Finnerty (1993), for example, provides a framework which decomposes the gain to an issuer, relative to using some standard security, of issuing a structured security into tax benefits, replication costs, transactions costs, and a residual which he interprets as the value added. An alternative interpretation is that such a residual reflects mispricing of the structured products via sales at inflated prices to poorly-informed investors.

Thus it is also necessary to consider whether the design of the structured product considered here generates some private or social value, and if so, to whom. While the issuance of some form of hybrid security can be rationalised on standard corporate finance grounds (such as information asymmetry), that is not sufficient to explain the resulting design characteristics such as in evidence here.

An additional motivation for the paper is to ask whether the product design creates sufficient financial consumer protection concerns that would have led ASIC to intervene under forthcoming legislative changes. Those changes, resulting from the Murray Report (AFSI, 2014), include product suitability requirement issuer obligations and ASIC temporary banning powers (Treasury, 2017). This product thus provides an initial case study to consider the extent to which such powers might reasonably be applied.

The following Section 1 outlines key characteristics of the security and its issuer Section 2 provides an analysis of the complications which would be faced by retail investors and their advisers in attempting to value and assess risks of the product. Then, in Section 3, an analysis of the resulting potential conflicts of interest for the issuer is provided, while Section 4 considers motivations for the issuance and design. The conclusion considers how such a product might be treated under the forthcoming legislative changes to identify their likely range of application and effects.

1. The Product

The product in question is the issue of Convertible Preference Step Up Units (CPUs) issued by the US Masters Residential Property Fund (URF) at the end of 2017. URF is a property fund listed on the ASX in 2012 and had a market capitalisation of $661

million at end 2017. A Product Disclosure Statement (USMRPF, 2017a) was issued on December 1 2017 for the raising of at least $100 million, and up to $300 million, by the issue of CPUs restricted to Australian residents. Priority was given to applications from existing unitholders in URF and investors electing early redemption of URF Notes (Series 1), which would otherwise mature at end 2019, and rolling over their investments into CPUs. In the event, $199 million of CPUs was issued of which $131 million involved rollovers of URF Notes.

Each CPU had a $100 face value and was designed as a perpetual preference security offering distributions of 6.25% p.a. (paid semi-annually), with the coupon rate stepping up to 8.75% after January 1 2023, if not converted into units in URF on that date (or subsequently). URF is an Australian listed managed fund which makes investments in US real estate held and managed by a US REIT which is effectively under the control of the Australian Responsible Entity (RE) of URF.

The conversion arrangement is that (except under conditions outlined below) each CPU converts into $102.56 value of URF units based on the 10 day VWAP preceding the conversion date, such that if P_T is the VWAP, the CPU holder will receive N = $\$102.56/P_T$ URF units.[1] (At the date of issue of the prospectus for CPUs, the URF units were trading on the ASX at $1.86). However, a limit is also specified on the maximum and minimum number of units which can be received such that $44 \leq N \leq 205$. This is a common conversion payoff structure found in many issues of converting preference shares in Australia. (Davis, 1994, provides an early analysis of the structure). The Product Disclosure Statement (PDS) states that "these limits on the conversion number mean that CPU Holders will effectively participate in any increased value on conversion when the Unit price on conversion is above $2.33 (or have an increased exposure if below $0.50)" (USMRPF, 2017, page v). As will be shown subsequently, that upside participation is by no means guaranteed due to the issuer control over the conversion decision.

The distributions on CPUs can be deferred (without triggering a "default" event since the CPUs are preference shares), but a "distribution stopper" on distributions to URF units then applies. If conversion occurs, deferred distributions are included in conversion (but without any maximum or minimum constraint on the resulting number of units received for that component).[2]

As "preference" units in URF, CPUs have priority over URF units in a winding up, but are subordinate to creditors of URF, and are treated for accounting purposes as equity. Similar to distributions to URF holders, some part of CPU distributions may be classified for Australian tax purposes as a return of capital (tax deferred income). Because the income generated by URF is foreign sourced (and subject to US

[1] The conversion price is at a 5% discount to the VWAP which leads to $102.5641 of securities being received.

[2] CPU investors are also offered the option to reinvest distributions into URF units at a 5% discount to the current price rather than receiving cash.

withholding tax for REITs) the income component of distributions would be an unfranked distribution.

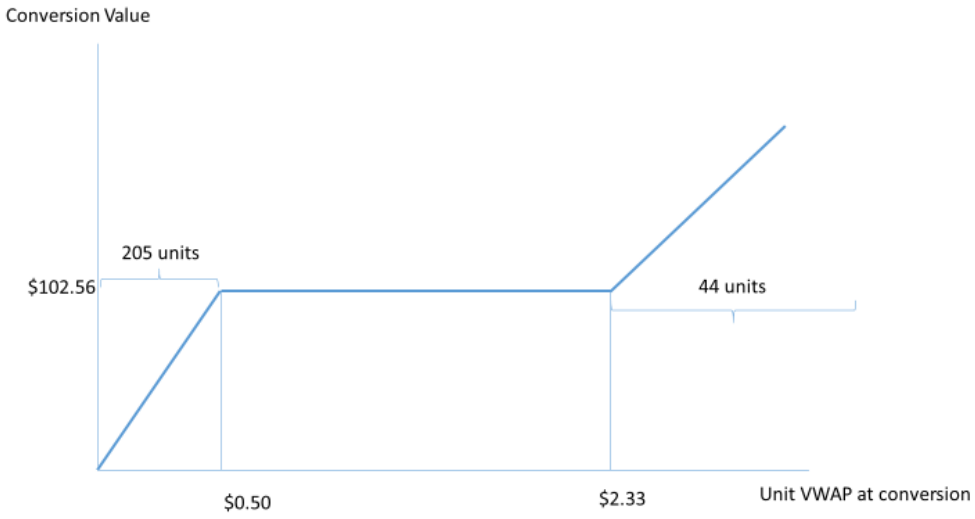
CPU holders have URF voting rights, as do URF unit holders. The allocation of voting rights is somewhat unusual with the number of votes per investor related to the stock market value of their holding of CPUs and/or units respectively.

2. The Conversion Decision and its Implications

A crucial feature of CPU conversion arrangements is that the conversion is at the option of the RE. The first possible conversion date is January 1, 2023, and the RE has an ongoing option (if not already exercised) to force conversion at six monthly intervals (on each distribution date).

Under the assumption that conversion occurs, Figure 1 shows the resulting conversion value of the URF units received (although note that this is related to the 10 day VWAP which could differ from the conversion date market price of units). If the VWAP is below $0.50, the CPU investor will receive the maximum number of 205 URF units, and incur losses on conversion, relative to the $102.50 value of units received if the URF price is above $0.50 and below $2.33. If the VWAP exceeds $2.33, the CPU investor will receive the minimum number of 44 URF units, suggesting potentially unlimited upside related to the URF price.

Figure 1: Conversion payoff



This conversion value (ignoring the value of distributions received prior to conversion) to the CPU holder could be replicated by the investor being: (a) long a zero coupon bond paying $102.56, (b) long 44 call options on URF units at a strike price of $2.33, and (c) short 205 put options on URF units at a strike of $0.50. To estimate the value of the CPU it would then appear appropriate to take the sum of

the Present Value of distributions prior to conversion date and add the Present Value of the zero coupon bond and the call option position value and subtract the put option position value. The option valuation would need to recognise that options are company issued options such that the number of units on issue would change if exercised, requiring use of a warrant option pricing formula. (See Handley, 2002). This would also need to incorporate the present value of expected future distributions on the URF units, and the interest rate used for calculating the present value of CPU distributions would need to allow for associated default/deferral risk.

Even assuming that the retail investor, or their advisor, could derive the replicating position and apply option pricing technology to derive a value for the CPUs, there are major impediments to successful application. One is that the underlying asset values of URF are US assets, whereas the units and CPUs are denominated in AUD. Hence volatility of unit prices (needed for applying option formulae) will depend on the volatility of the underlying USD assets (which are specific residential properties, whose value is arguably opaque) as well as the USD/AUD exchange rate volatility (and covariance between them). While historical volatility of the URF unit prices can be estimated from ASX trading, the reliability of these for forward-looking estimates of volatility over the horizon involved, required for option pricing valuation, are questionable.

However, a far more fundamental issue is that conversion is at the option of the RE. Assuming that the RE operates in the interests of unit holders it will need to consider whether CPU conversion is better for holders of underlying units than having a perpetual security (CPU) paying 8.75% p.a. remaining on issue. The RE thus has an option to exchange some amount of one security (URF units) for the CPU. Complicating matters even further, the CPU contains an embedded option giving the RE the right to enforce conversion at six monthly intervals.

It is, at least in principle, possible to calculate the value of such an option to exchange (Margrabe, 1978), and would involve taking into account the volatility of the unit price and the volatility structure of interest rates (and the correlation between these variables). But to assume that this is something which can be expected of retail investors and their advisers is extremely optimistic.

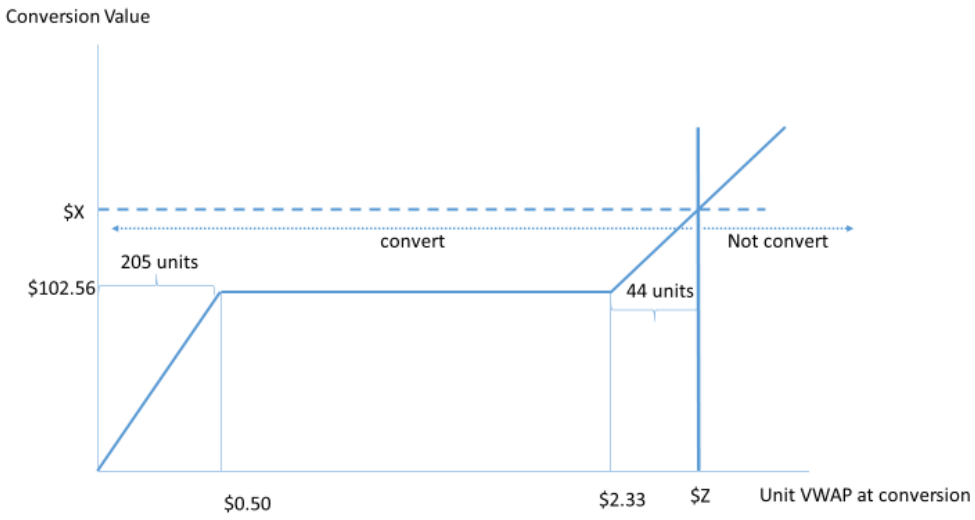
However, it is worth considering a simple approximation to highlight the complications this causes for valuation and investor interpretation of the CPUs. Assume for simplicity that the conversion option held by the RE is European with an expiry date of January 2023. One could then estimate the future (2023) value of the (unconverted) CPU perpetuity paying 8.75% based on implied forward interest rates, and use this as the strike price that the RE would use in deciding whether to exercise its option to convert.

If the conversion value in terms of units received exceeded that perpetuity value, the RE would not, if direct financial benefits to the unit holders were the only consideration, exercise and force conversion. It is likely, given that the yield to

maturity on existing URF notes was around 7.75%,[3] and given the relatively flat term structure of interest rates, that the future (2023) value of an 8.75% perpetuity was somewhat higher than $102.56.

Suppose that the expected perpetuity value were $X > $102.56 as in Figure 2, which corresponds to a unit price of $Z for 44 units (the number received if conversion occurs in that price region). Then, if the unit price is above $Z, the RE would not convert (since the value of the CPU perpetuity continuing is less than value of shares given to CPU holders if conversion occurs).[4] Thus the upside to the investor at unit prices above $2.33 is bounded at the perpetuity value of $X.

Figure 2: The Effect of the RE Conversion Option



Some very approximate calculations (deriving the date 2023 value of a perpetuity paying 8.75% by discounting at 7.75%) gives 100 x 8.75/7.75 = $114.52 as the value if conversion never occurs. The conversion value would thus be limited to a maximum of $X = 114.52 for unit prices above Z = $114.52/44 = $2.60. Under these simplifying approximations, the present value of X represents the maximum possible present value of the CPU (net of coupon interest payments prior to January 2023).[5]

But clearly, even this quite simplified and highly approximate method of calculating the fair value of the CPU is likely to be well beyond the reach of the typical retail

[3] Three series of URF notes were listed on the ASX, all with coupon rates of 7.75 per cent and all had been trading at "clean prices" (ie excluding next interest entitlement) around par.
[4] If interest rates had increased markedly, the perpetuity value at 2023 might be less than $102.56 such that even if the unit price is below $2.33, non-conversion might be a preferred choice for the RE.
[5] Discounting X ($114.52), the expected perpetuity value at January 2023, and the stream of CPU coupon payments prior to January 2023, at 7.75 per cent gives a present value of $104.35, whereas if X is replaced by $102.56 the present value is $96.12, This suggests that the many URF holders who converted notes trading at around $100 into CPUs were likely to have expected (based on advice received) either to obtain some of the upside (via conversion or the higher coupon rate if unconverted) or have been applying a lower discount rate.

investor or their financial advisor. The questions thus arise of why such a product should be designed and marketed to such investors, and what potential conflicts of interest for the RE, with adverse consequences for the investors, result?

3. Responsible Entity Rights and Potential Conflicts of Interest

The fact that the conversion option rests with the RE, rather than it being mandatory or at the option of the investors, creates significant conflicts of interest for the RE to the potential detriment of the investors in CPUs. Indeed, the prospectus advises that the RE "has no obligation to convert and may elect to convert at a time that may be disadvantageous to CPU Holders in light of market conditions". (USMRPF, 2017, page 26)

The RE is required to act in the interests of URF unit-holders, and their interests are clearly in conflict with those of the CPU holders (although membership of the two groups no doubt overlaps). At the conversion date, the RE is faced with choice of making a conversion decision which must benefit one of these stakeholder groups at the expense of the other. If its obligations are interpreted narrowly as giving priority to the interests of URF unit holders, then it must choose a course of action which involves the poorer outcome for CPU holders. Alternatively, even if its obligations are interpreted as not discriminating between the two groups, it must still make a decision which is to the advantage of one group. (The only exception is where, by chance, the value of the perpetuity is equal to the value of units which would be received on conversion).

Another problem is that the RE could influence the future value of the units via its distribution policy, whereby higher URF unit distributions would reduce the future unit price, *cet. par.* If the RE operates in the interest of unit holders at the expense of CPU holders it may aim to keep the unit price below the point at which upside for CPU holders commences ($2.33).

There is also the possibility that the unit price at the conversion date may differ from what the RE believes to be the "fundamental or true value" due to market mispricing. (Given the non-traded, hard to value, nature of the underlying property assets of the fund, this may be quite likely). If the market price of units is below their perceived fundamental value, the RE will be less willing to force conversion since the number of units received by CPU holders will be higher than believed appropriate. If conversion occurred the former CPU holders would then share in the benefit if unit prices increased towards the perceived fundamental value. Conversely if the reverse situation occurred there would be an incentive to enforce the conversion. Similar effects could also occur if the RE has information not available to the market about future likely events which would affect market prices.

Perhaps most troubling from the perspective of corporate governance and conflicts of interest is that the 2018 Annual Report (USMRPF, page 76) disclosed that the three directors of the group all held both ordinary units in URF as well as CPU's. Should such positions still be held at the conversion date, the directors would face a

conflict of interest resulting from the effect which the conversion decision would have on the value of their personal investment portfolios.

4. Rationale for Issuance

Given the fundamental conflicts involved in the design of CPUs and the problems retail investors would face in valuing such securities, why would they be created and issued?

In assessing what value is created (and for whom) by the issuance of the CPUs with their complex design, it is important to note that the most appropriate benchmark for comparison is with an issue of new units (equity). The CPUs are, like equity, perpetual instruments which may convert into equity at some future date. While comparison with a straight perpetual debt instrument is, in principle, possible, the complete market absence of any such instruments renders such a benchmark impractical. Moreover, one stated reason for issuance, and replacement of URF Notes was to reduce leverage.

One obvious potential motivation for use of hybrid securities such as CPUs is if there are tax arbitrage benefits. That does not appear to apply in this case, since the tax treatment of CPUs and units is the same.

Various rationales are given for CPU issuance in the PDS. One is that CPUs are classified as equity for accounting purposes. Their issuance to partly replace existing debt lowers the leverage of URF, facilitating adherence to a target leverage of 50%. Interest coverage metrics also are improved. While, statements of fact, these provide no rationale for issuing CPUs rather than URF units.

Another possible rationale is that since the initial coupon rate on CPUs of 6.25% p.a. is below the 7.75% p.a. on URF notes being redeemed, benefits of lower required cash outflow arise for URF. Again, that is factually correct (at least till the conversion date of 2023). However, compared to issuing more URF units instead, cash outflow is likely higher. The historical annual URF dividend was 10 cents per unit, such that issuing new units at the then current unit price of $1.86 implies a yield of 5.38 % p.a.

Of course, issuance of new units might not have been possible without depressing the current unit price. Dutordoir, Lewis, Seward and Veld (2014) provide a survey of theories arguing that convertible debt issuance may overcome problems associated with asymmetric information about firm value.[6] Instead, the issuance of a hybrid security such as the CPU's may avoid adverse price effects arising from investor concerns that a unit (equity) issue is suggestive of firm overvaluation. The nature of the payoff structure for CPU's, which makes it appear more like a debt instrument, suggests that its valuation involves less "information sensitivity" considerations, and thus is able to be issued with less adverse price effects.

[6] Several other theories which they survey (such as risk shifting between equity and debt stakeholders, sequential financing benefits), are less relevant to this particular security design.

In this regard, the previous issuance of new URF units announced on 19 August 2016 is instructive. A placement and rights issue aimed at raising $85.7 million (ultimately raising $102.9 million) involved a subscription price of $1.95 which was a 7.5 per cent discount to the preceding 10 day VWAP. The unit price fell from an announcement day value of $2.07 to $1.95 on September 1 just prior to the close of the offer period.[7]

Arguably, an issue of a hybrid security such as CPUs would not have such adverse effects on the underlying unit price. In the event, the URF unit price fell from $1.855 at December 21, 2017 to $1.71 by January 10, 2018. Allowing for a 5 cent dividend during that period, this was a fall of around 5.4 per cent, approximately half of which could be explained by a small depreciation of the USD against the AUD, and negative effect on the AUD value of the US assets over this period. While multiple *ceteris paribus* conditions are not met in this comparison, the outcome is consistent with the prediction that a hybrid issue would have less impact on the unit (equity) price.

While these arguments may help explain why a hybrid security was issued rather than units (equity), they do not explain the inclusion of the issuer conversion rights – which increases the complexity of the product. Classification of the security as equity rather than debt for accounting purposes is not conditional on that characteristic. Nor would its inclusion significantly affect the information-sensitivity features of the hybrid security.

An alternative set of theories surveyed by Dutordoir, Lewis, Seward and Veld (2014) relates convertible issuance to investor demand considerations, and potential rationing in the seasoned equity market for some firms. Somewhat similar considerations could be advanced in this case by noting that the investor market for URF units comprises largely small investors, including self managed superannuation funds (SMSFs).[8]

The willingness of such investors to increase exposure to an equity stake in such a relatively high risk fund may have been limited, whereas perceptions that the CPUs were more like a debt instrument may have had appeal. Even though there is no effective diversification, CPUs might be classified as “fixed interest” in SMSF accounts providing an illusion of diversification of relevance for meeting reporting obligations.

Similarly, “framing” of the product in a way relevant for inducing URF note holders may have been assisted by the step-up perpetual feature and issuer option. Even in the “worst case” that the security is never converted by the issuer, the terms of the perpetual appear to be such as to make the switch from URF notes to CPUs a marginally positive NPV transaction.

[7] In addition, a slight appreciation of the USD against the AUD over this period would have increased the AUD value of the US assets by about 3 cents per unit, implying a larger negative price impact of the unit issuance

[8] At December 2017, the largest holder of URF units had 1.355 per cent of total units on issue and the top 20 holdings aggregated to 5.75 per cent. (USMRPF,2017b)

One possible argument is that retail investors may not recognise the true value of the options granted to the RE and thus overvalue the security, to the benefit of existing unit holders. Davis (1994) notes that securities with these type of conversion arrangements can be interpreted as equivalent to the new investors (in CPUs) purchasing equity and simultaneously entering a swap with existing equity (unit) holders where they give up capital gains over some period in exchange for a higher stream of dividends. Management operating in the interests of existing equity (unit) holders would have incentive to create that situation where management expectations of future capital gain exceeded those of potential investors. However, to the extent that most of the investors were likely to be existing stakeholders in URF, being advised by financial planners who are part of the network operated by the RE, this would suggest that little net aggregate benefit to URF investors was likely.

Yet another explanation might be found in potential for the RE and its associates (including financial advisers) to benefit from fee income associated with the issue. The fees derived by the RE and its agents from the issuance of CPUs amounted to around $4 million (based on PDS information that 2 per cent of the monies raised would be so allocated).

5. Conclusion

This case study provides a clear example of where financial product design conflicts with retail investor financial literacy. While there does not appear to be significant likely investor detriment from the product design, the question arises of whether investors (and their advisers) would understand the risks and expected return from the product.

With ASIC soon to receive new temporary banning powers over financial products, accompanied by new product design and distribution obligations for issuers, the question naturally arises of whether this product would fall foul of the new legislation.

It is unlikely that the CPUs would automatically fall foul of the design and distribution obligations (provided that the issuer had taken into consideration the target market characteristics), although the product complexity and likely investor understanding could create questions.

However, here there is a complex issue relating to the distinction between *primary market issuance* and *secondary market trading*. The CPUs are listed on the ASX, making them available to any retail investor, even though they may not be suited to such investors. ASX listing reduces the potential impact for initial investors of being locked into a perpetual security if the issuer never exercises the conversion option, by enabling them to liquidate their position. However, it exposes a wider range of potential retail investors to the risks of investing in the security.

ASIC's proposed banning powers are limited to situations of product issuance where there is suspected contravention of law, such as defective disclosure. In the current

case, there is clear reference in the PDS to the possibility that the issuer may decide not to ever exercise conversion or do so at a time unfavourable to the investor. So it would appear unlikely that the product would fall foul of this requirement.

Consequently, it appears unlikely that the new legislative requirements would inhibit the issuance of complex financial products such as CPUs provided disclosure is consistent with legal requirements. However, whether such disclosure ensures that investors really understand the risks and characteristics of the financial products involved remained a major concern.

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