Technical Challenges in Personal Financial Planning

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**MOTIVATION**

When I started to take my super seriously I also got to talking about the super issues with a few of my mathematically-oriented colleagues, and one in particular who was also approaching an age where these things were interesting and challenging to him. As we talked, we realised we had formed some common views about the super business.

First, we had both developed doubts about the quality and thoroughness of the strategic advice we were getting. Second, we both felt ripped off by the way fees and various front-loaded and trailing commissions were levied. Being in business, we understand the need for advisers to generate a decent living and perhaps we would not feel so bad if we thought the advice was always of good quality and unequivocally in our interest. Third, we both recognised that the skills, experience and mathematical modelling tools that we had developed and honed over many years in our business had a potential application in personal finance.

Before going on, I should explain what it is that we do in our long-standing business that made us think we should be able to do better.

**THE APPRENTICESHIP**

The professional skills of our key technical staff are mathematical modelling and optimisation applied to two main sectors; energy and business finance.

The company working in the energy field is Intelligent Energy Systems (IES). We’ve been going for 25 years, and are pretty much at the centre of the electricity sector in Australia and, increasingly, overseas, especially in Asia. We apply our mathematical modelling skills to the systems that are used to operate the electricity market and the physical electricity system. We advise on and audit the complex mathematical model and software that drives the system and have designed significant parts of that system. We do modelling work and software used by most of the best-known industry participants, generators, retailers, regulators, network owners and the market operator, NEMMCO. Right now we are working with our various
customers on the government’s Carbon Pollution Reduction Scheme. We do modelling work covering all the energy sectors and have done a lot of such work recently on energy trade in the Asian region.

Our sister company working in the finance field is Intelligent Financial Systems (IFS). IES and IFS have always shared the specialist modelling skills and tools that both companies use. Under these companies we have worked on many modelling exercises for the finance sector over the years, but our principal software product in finance is called Apollo. Apollo is software that structures large complex leases in a way that makes most effective use of the debt and equity resources and all the tax rules and other regulations surrounding these leases. The product has been used by all the major banks and most of the second tier ones, as well as some specialised lease packaging firms. To give you some idea of what Apollo is used for, many or perhaps most of the jumbo jets flying in and around Australia are operated under leases put together with our Apollo package. It’s a seriously potent analytical tool.

It’s worth dwelling a little on why Apollo has been successful over the years (although leasing is now less attractive than it used to be because of rule and tax changes). The primary reason that prompted us to develop the tool is that we thought – indeed we KNEW – that we could deliver a better outcome than current practitioners who designed lease structures. Why did we know that? We can specify mathematically all the rules governing the lease and the possible objectives for structuring it. And we knew we could build a system to implement all of that because we have developed and used the required tools and skills over many years.

We developed a prototype and demonstrated it sometimes sceptical lease analysts, and for most potential customers it won the day over the previous spreadsheet tools they were using. Getting a better outcome was compelling enough, but a hidden and even more compelling benefit was that Apollo was much less error prone than operating a spreadsheet and that it only required one run to get THE optimal strategy (OK, let’s say a few if we need to make some adjustments here and there), not hundreds of runs fiddling various inputs following a “suck it and see” strategy. Apollo saves a lot of analytical sweat.

ENTERING THE WORLD OF PERSONAL FINANCE

With this experience under our belt, and somewhat jaundiced by the state-of-the-art in the personal finance advice sector as we had experienced it, we resolved to develop a prototype of a Personal Finance Optimiser (PFO) to see if there was the scope to do better that we thought there was. We call this tool Optimo Pathfinder. We had to make a few design decisions to get going. One was that we would deal with risk and uncertainty the same way as the industry does, by supporting the ability to structure portfolios into different asset classes. But we would use our modelling technology to optimise an individual’s strategy in relation to his and/or her personal financial goals and all the opportunities and rules that apply in the system, including the tax system, superannuation in all its aspects, the pension and various other matters such as the educational HELP scheme and the home savings facility.

As we started researching for this development, some things become abundantly clear. Even after the Costello super reforms, what strikes us is that the rules are REALLY COMPLICATED! Sure, you can study one aspect, such as the age pension, and understand the assets test, the income test and all the other elements. Then you can look at the super system and understand employer contribution, post tax contributions, salary sacrifice, transition to retirement and so on, with all their sometimes strange rules and limits. And most people understand in broad terms the marginal tax system but maybe not the various rebates that may also apply.

Even modellers like us who are not fazed by big and complicated physical systems, stand in awe of the personal finance rules in Australia. They have an impressive labyrinthine quality that lead to what mathematicians call non-convexities. In plain language, that means that near enough is not good enough; you could be entirely on the wrong track, and often will be unless you are really rigorous in your analysis. It also means that the right strategy is not obvious and fundamentally difficult to find and be confident you have found it.

But put it all together and try to decide on the best strategy to deal with all of this, and it’s REALLY HARD! In fact, we assert it can’t be done by just fiddling with a few numbers and looking at the outcome. So we have a new and profound respect for the challenge in what financial planners are SUPPOSED to do for their clients; we just retain some doubts as to whether most actually do it.

SOME EXAMPLES

Let me give you a simple example. Michael is a 52 year old professional still working and earning a good income. He has just realised he hasn’t been setting aside enough for his retirement when he comes into an inheritance of $290,000. What should he do with it? This example comes form a financial adviser’s newspaper column but it must surely be common enough in a variety of forms.

The advice? The columnist advised and nine out of ten planners; put it into super. That would be an after tax contribution but it’s earnings will be taxed at a mere 15 per cent, not the 40 per cent plus Medicare levy that he would have otherwise paid at his marginal tax rate. A good strategy? Certainly, up to a point, if he wants to save for his retirement, as he does. The adviser will happily organise the contribution and may well even more happily take up-front and trailing commissions in the process.

But is this the best strategy? In general, NO! But Michael should not make an after-tax contribution with this cash. He should invest it in a secure interest-bearing deposit. He should then salary sacrifice to super an additional amount and, over a number of years, make up the lost in-hand income by drawing down the loan and any interest paid on it (accepting that the interest will be taxed at his marginal rate). It’s easy to state this and to see, after the event, that it leads to substantial net tax savings and greater individual wealth in the end. It’s not so easy to implement this strategy in the best possible way, as all sorts of tax issues and rules interplay, not to mention the interplay with all the other financial issues that typically affect someone in Michael’s position.

This case study would be much more complicated by tax rule changes which are will begin on 1 July 2009 involving adding in salary sacrifice super contributions and, in some cases net investment losses, into various government rebates and benefits.
This is a simple example but we suggest not at all obvious and potentially missed by planners who rely on experience rather than serious analysis. It’s also worth noting that there may be no commissions to the financial adviser on the interest bearing investment outside super, which typically don’t pay commissions. The right strategy is less lucrative to the adviser! So don’t expect to get the right advice from an adviser in this case, and many other cases like it.

I’ll give another example from direct experience. It relates to a super rule that is now gone, but it’s a good illustration of some of the points I have been making.

About 6 years ago we had won a big job in Asia that would keep me away from home but earning steadily – a novel experience! We were not only able to pay ourselves an unaccustomedly handsome salary, but we could also take the opportunity to build up our super balance.

But there was a snag. If you were an average earner your super contribution tax rate was 15 per cent, but once you got into a higher earnings bracket, the Howard Government decided you should pay up to 30 per cent tax on you super contributions; still a good deal but not as good as before. This was known as the 15 per cent super surcharge (later reduced and then abolished by the same government that introduced it). The procedure for determining what tax rate you should pay in super was based on your total income which included your normal income, your super contributions and a whole bunch of other things as well such as fringe benefits.

As with many of these bright ideas, the problem was how to phase it in. In essence, moderately well off people should pay 15 per cent contribution tax on all their super, very well off people should pay 30 per cent, and people part way between these cases should pay tax on their super contributions at a rate something in between. So they chose a couple of income levels to begin and complete the phase-in and that was it.

To us at the time it seemed a bit tricky to decide what to do, so I asked my financial adviser. His advice – equalise your income and contributions, or nearly so. When you own a business you do have some choices about which spouse earns how much and whether you pay yourselves a lot this year and more next year, or vice versa. So this sounded like sensible advice, based on experience. After all, most people know that if you equalise income you equalise marginal tax rates and that means less tax is paid, right? Maybe, but I wasn’t satisfied. Much later, as I saw on paper the amount of super tax and surcharge we were paying, I set to work on a spreadsheet trying to understand how the transition rules worked.

What I found was startling. If you were a moderate income earner moving to a high income earner and made only small super contributions, it didn’t really hurt. But if you and your spouse were paying into super at the maximum allowed rate (as we wanted to do) then a strange thing happened as I tried to shift income to my spouse (on paper). As I reduced my income (on paper), I paid less tax at the (highest) marginal rate. But as my wife (notionally) passed though the total income levels where the super surcharge started to cut in, I found that for every dollar that I shifted to her, every last dollar saved went to the taxman through the super surcharge! As her total income increased, the taxman took all the tax I would have saved. Evidently, the gnomes in Canberra designed it that way to discourage people like us. But, having broken through that barrier, her effective marginal tax rate fell again (as she would not pay much income tax on her income without the super contribution). In the meantime I would have shifted into lower tax brackets. Below I summarise my wife’s position, very approximately as it’s a while ago now. Bear in mind that we wanted to contribute to super as a priority.

- For the first block of income paid into super (up to a limit of about $100k as I recall) she would pay the 15 per cent super contribution marginal tax rate.
- Having reached the contribution limit, at about this income level the super surcharge of 12.5 per cent (as it was then) phased in over an incremental total income of about $21k as I recall. The effect of this was that she was paying the top marginal tax rate of around 45 per cent for this block of income.
- After her total income passed the top threshold for the super surcharge, her income tax payments would drop back to a relatively low marginal rate, and then start increasing along with the standard income tax rules as her income increased further.

This was a very complicated effective structure and finding the best joint strategy is a non-trivial exercise, with possibly tens of thousands of dollars at stake in a single year, for people who were not well off that the time (but hoping to become more so). The question was – should two people break through the surcharge barrier or only one? Is it sensible to make maximum super contributions at all, given the weird tax arrangements that applied then?

Thankfully, the super surcharge is now gone. I don’t personally have a complaint about the idea of well off people paying their fair share of tax. But there must be more elegant ways of doing this than the super tax surcharge. If greater equity in the super system is a concern, perhaps we should pay income tax on all our income, including what we contribute to super, but we all get a 15 per cent tax rebate for super contributions. But I digress.

There are two lessons that I would draw from this particular episode and observations made since. The first is that the taxman manages time and time again to devise rules that defy any sort of intuitive analysis to determine the best strategy, or sometimes they even defy common sense (such as appeared in this case). The second is that my financial adviser, and I believe most if asked the same question, gave me advice based on experience which may or may not have been applicable to our particular case, which was not typical.

I initially had a sneaking sympathy for my adviser in one way because the right strategy wasn’t obvious. But then I sobered up. He’s a professional and he was earning a fat commission through a pipeline into our super accounts, so we were entitled to expect a bit more careful consideration of our position.

**WRAPPING UP**

When we began the Pathfinder prototype development we imagined that we might find a few percentage points improvement by finessing things here and there. What has surprised and delighted us in many of the case studies we have done, is that the optimal strategies identified not only involve
substantial sums, but they are often surprising yet strictly within the rules. The amounts added to individual wealth can be substantial; so much so that we have approached the Federal Treasury to tell them about our tool and to determine their interest. We have suggested that it might be a useful “loophole finder” that could assist with the assessment of policy affecting individuals and families. As I write, they have declined to take it further.

As we continued with our case studies, our conviction about the utility of this tool has firmed. As part of our due diligence, we have researched the other major software on the market used by financial advisers. These are pretty good tools for what they do – we use one of them ourselves. They do client tracking, simple plans, management of contacts, production of Statements of Advice and support for all the other things an adviser and his firm must do. They do a lot of work for large operators such as the big retail banks, to make sure clients are delivered smoothly to the bank’s products and product platforms with a minimum of fuss and at least cost. Expending time and effort to produce a quality strategy for the client is, from our enquiries, not on the radar screen of most advisers, with some honourable exceptions.

The analytical tools used by most planners need help. They need to help the planner reach an optimal strategy, rather than rely solely on the planner’s experience to come up with one. Without such help, the planner may not have the time or the motivation to really explore all the potentially viable options for the client. A few “suck it and see” scenarios for each client are clearly not enough. The even bigger problem is that the client will seldom find out how much they have been short-changed, not just because of the fees and commissions, but because of the inadequacy of the strategy.