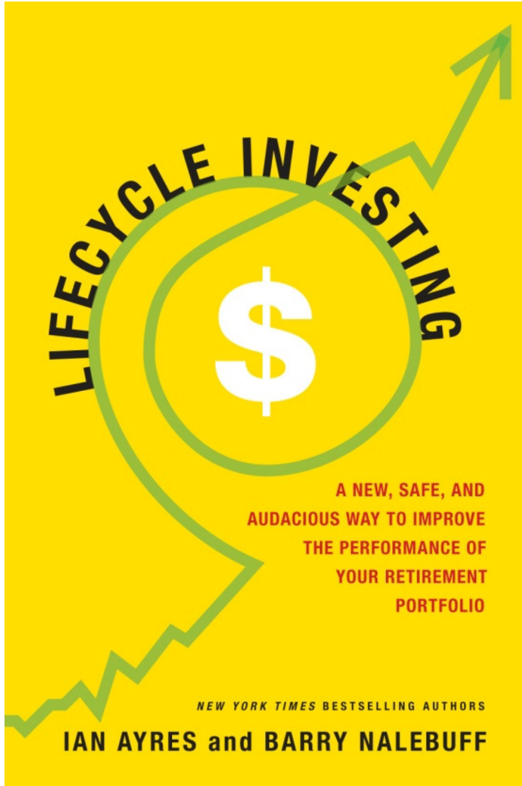
Lifecycle Investing

Ian Ayres and Barry Nalebuff © 2010

A key take away from Ayres and Nalebuff's book is to be "temporally diversified" – that is diversified across time. While many investors go to great lengths to spread their risks by holding different types of assets and different investments within an asset class, many are at risk of investing or divesting at the wrong time.

This book recommends long term investors "use leverage to buy stocks when you are young" then substantially reduce your share exposure as you're older. This reportedly helps you spread your risk of investing in equities over forty years, rather than concentrating it in the last ten years of your working life. While it is understandable you may not want to follow the authors' recommendations, their work may help you think differently about managing risk.

The authors admit to receiving hate mail for recommending gearing in the middle of a financial crisis.



Basic Books
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> **"while it may seem paradoxical, exposing yourself to more risk by leveraging stocks early on actually reduces your overall investment risk"**

Managing temporal risk

Most build up their investment assets slowly at first

- **Reasons: Savings directed first to pay off a mortgage or fund children's education; retirement is too far away for young to save for; income rises with age and experience, …**

Retirement funding then depends on investment returns during your last decade working and saving

- **"People make the mistake of putting 80% of their stock investments in just ten years"**

People should instead work out the Present Value (PV) of their future savings and invest a target proportion of that plus current savings, say 50%, in equities as soon as possible

- **"Our main point is to figure out how you would invest that money if you had it today"**

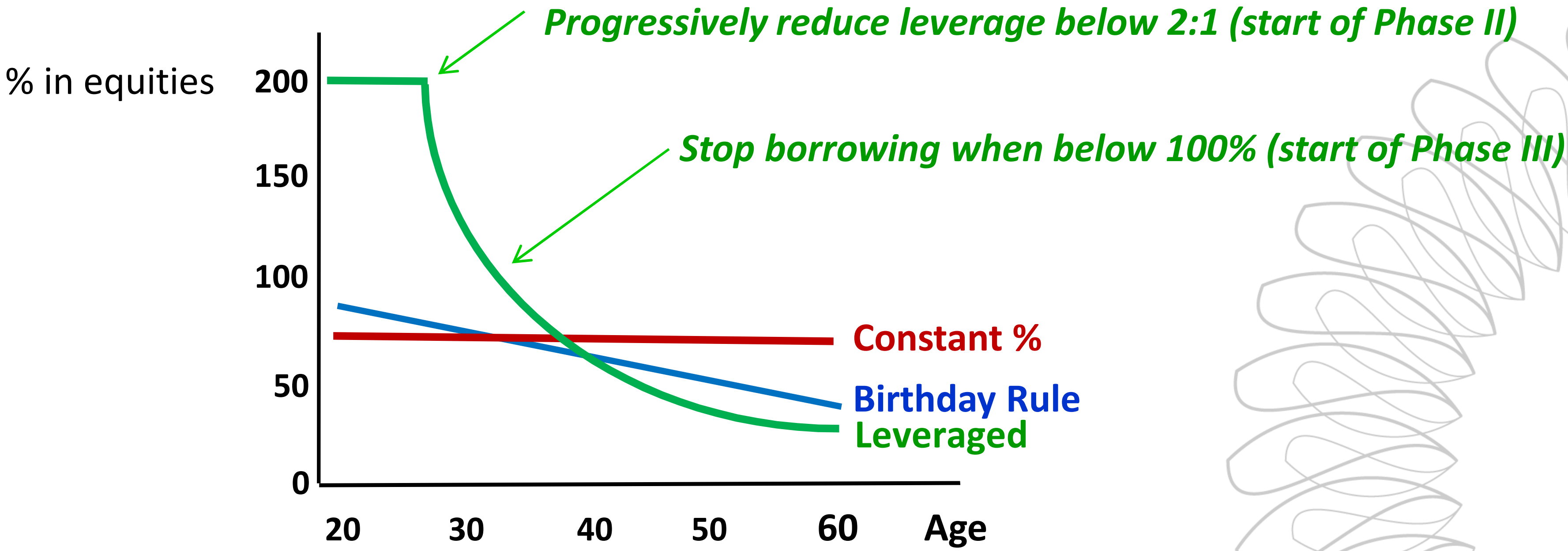
Because the PV of your lifetime savings can be very large when you're young, you'll need to use borrowed money in your 20s and 30s to achieve this target. By the time your in the 40s your equity mix might approximate "the birthday rule" but then it should fall to a modest 40% by age 60

- **Author's version of the birthday rule is to have 110 less your age in stocks (eg. 50% at age 60) although others have suggested 120 or 100 as a factor**

For practical reasons, they recommend capping leverage at 2:1 in your 20s (Phase I), then reduce your leverage to reach your target equity $ amount (Phase II) then cease leverage when you have more in savings then your target equity $

> **"While people are comfortable investing in a home on a 10:1 leveraged basis, they have not been able to bring themselves to invest on even a 2:1 basis in stock …**
> **All we're proposing is to make stock purchasing a little bit more like buying a house"**

Equity mix by age for three common rules



Constant % calls for keeping same % of funds in equities over your lifetime (eg. 50, 60, 70 or 75%)

- **This is what most Australian's do who stay invested in a default super fund**

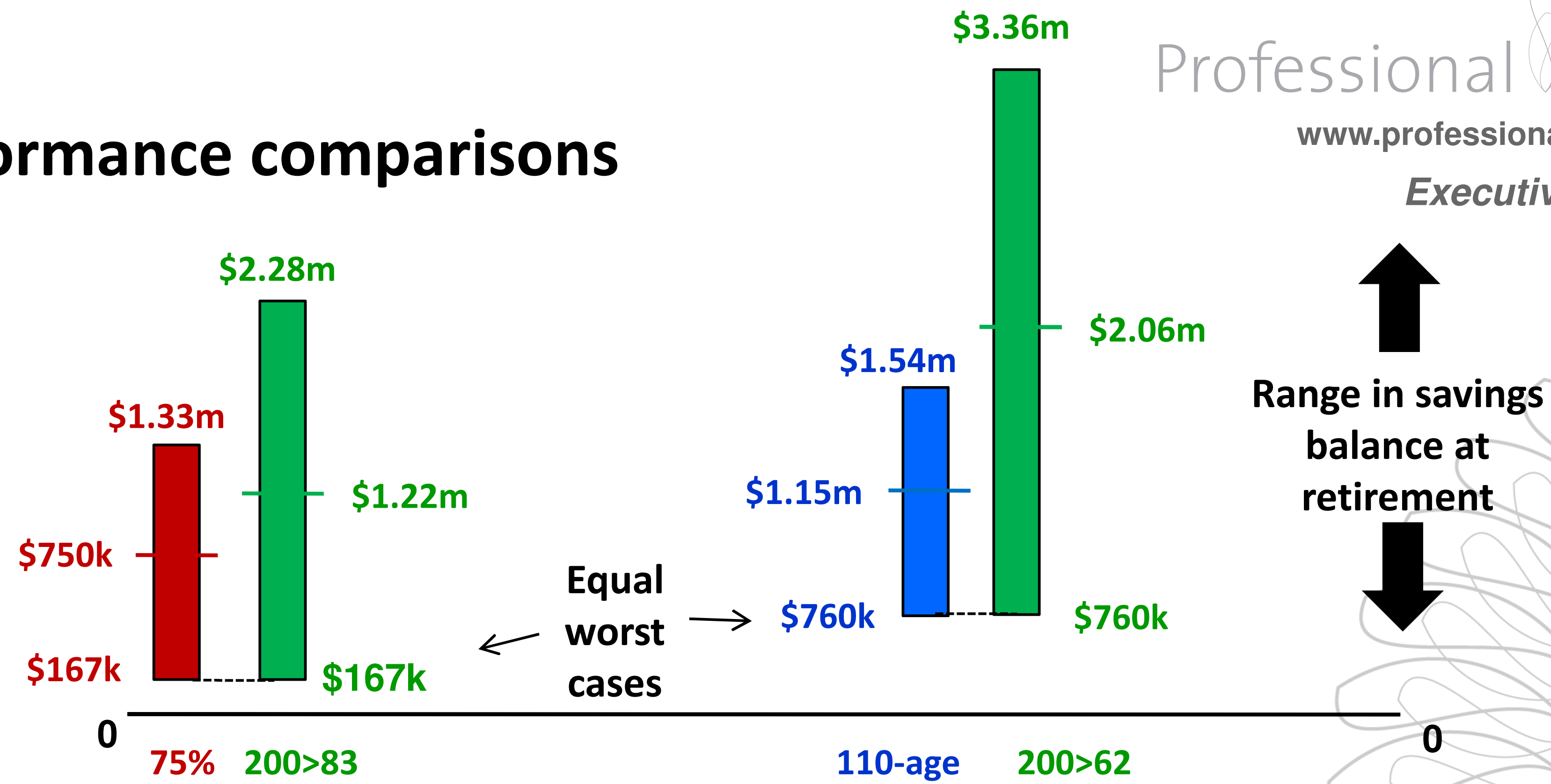
Birthday Rule (here 110 – age in equities) calls for you to reduce your equity risk 1% each year, while increasing your bond exposure

- **A few Australian super funds are introducing "target date retirement" funds linked to this idea**

Leveraged rule seeks to have same $ amount of lifetime savings invested in equities

- **Unfortunately when your young you don't have enough savings so the theory calls for you to be leveraged (max 2x or 200%) and 100% invested in equities, which you later both reduce**

Performance comparisons



Comparing with constant equity % (left side, red) and birthday rule (right side, blue), leveraged savings model (green) offers higher median and maximum savings at the start of retirement for same worst case, historic simulation outcome *(or for same median outcome it offers a narrower range of best and worst case savings – not shown)*

For instance, if you always kept 75% of your savings in equities your balance at start of retirement would be a median $750k, although it could be as much as $1.33m and as low as $167k

- Instead if you followed the leverage retirement savings model you would have median savings of $1.22m or as much as $2.28m, for the same worst outcome of $167k

Similarly, if you followed the birthday rule, your median retirement balance would be $1.15m and have best and worst $1.54m and $760k. For same worst case, you could have instead median $2.06m and as much as $3.36m.

Est. from US equity & bond returns since 1871 and investor who saved 4% of salary retiring on income of $100,000

Is your job a bond or equity?

This theory assumes your future income and savings are bond like, however that may be invalid if your income is uncertain or linked to the share market

- **"Civil servants and professors are more like bonds, while investment bankers are more like stocks"**

According to work done by Moshe Milevsky, the amount of money in equities you should have at age 45 differs depending on your profession

- **280% for a tenured professor (who have very certain future income)**
- **170% for a lawyer**
- **125% for an engineer**
- **60% for an investment banker**
- **And "low" also for business owners or executives who retain substantial company stock**

Applying this theory to endowment fund investing means those funds that receive future contributions should be managed differently to closed funds (ie. they should invest more in equities)

- **"Yale [*University endowment fund which still receives alumni donations*] is like a forty-year-old who expects to still make significant contributions to her nest egg, while Ford [*Edsel Ford's closed foundation*] is like a retiree whose earning days are over"**
- **"The PV of future contributions to the Yale fund is $14.5 billion … and for Ford is zero"**

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