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Swan song

Retirement looks different for everyone. But whether you plan to spend your golden years jet setting around the world, playing on the beach with your grandchildren or tending to your garden, one thing is true: It's going to cost you.

Just how much it will cost you isn't quite as clear. Calculating how much you will need in retirement capital is much like measuring the length of a ball of string... difficult but not impossible. Fortunately, expert financial advisors come armed with high tech software resources capable of performing a financial needs analysis of your specific monetary present and future. In reality, the rand amount that you'll need in retirement will come down to your specific lifestyle, how long your retirement will be, how much you've saved over the years and what other funds are available to you. Doing the math while you're still working will mean less of a headache down the road.

Realising in retirement that you may not have enough will require more substantial changes to how you may need to live and what you can spend on. It is easier to make changes while you are still earning income. So, take out your pen and paper (or more likely, the calculator on your phone) and answer the following questions to map out how much money you need saved for retirement.

1. How much will you spend in retirement?

The financial planning industry has come up with a general rule of thumb for how much you're likely to spend in retirement: 80% of your pre-retirement income. The thinking is that in your later years, some costs — like commuting, schooling, bond payments, retirement contributions — are expected to go away. However, you probably want to give yourself a buffer. Sure, you may not be covering costs like petrol for your drive to and from work, but you're probably also adding new retirement expenses, like a house repair you've been putting off or increased medical costs tied to aging.

The trick is to look at your current lifestyle and how much it costs, and then ask yourself what is going to change. It works best if you're very detailed in this exercise; you may think you have a good idea of how much of your income every month goes to necessities vs. discretionary spending, but you may be surprised if you spend a few months actually tracking your spending. Don't forget about inflation. The average South African inflation rate over the past 10 years has been 5% however, some costs, like health care, are expected to rise even faster.

Life is unpredictable, and it's impossible to know exactly how much you'll spend in retirement. But calculating how much you spend on a regular basis now and adjusting that for a changing lifestyle and inflation is the first step in determining how much money you'll need once you ditch your nine-to-five.

2. How long will your retirement be?

This question may be even more tricky than calculating how much you'll spend in retirement, since no one knows how long they'll live. But we can take an educated guess.

The median retirement age is age 62, according to the most recent Retirement Confidence Survey conducted each year by the Employee Benefit Research Institute. While that might sound like it's on the early end - since the traditional retirement age is 65 — it does signal that you may need to prepare for a longer retirement than you expect. With the overall SA life expectancy at 66.14 years as of 2023, according to Statista. However, bear in mind that this is the overall figure across all socio economic groups and it would make sense to factor in a retirement of at least 10 to 20 years for higher socio economic groups.

For some people, though, planning for 20 years won't be enough. While the average life expectancy in SA is in the high 60's, the share of South Africans who are living much longer is also growing. The number of South Africans living until late 80's, for example, is expected to triple over the next three decades, according to Stats SA.

You should try to build a more individualized life expectancy estimate by considering factors like your family health history and gender, as well as your behaviours around smoking, diet and exercise. Women live much longer than men traditionally. And there is a long line of research linking physical activity to longevity. A study published in the American Heart Association's journal in 2022, for instance, found that exercising five to 10 hours a week was associated with a 26% to 31% lower risk of death from any cause than not exercising at all.

3. What will your sources of income be?

When you no longer get an annual salary,

you're (hopefully) not saying goodbye to all of your income.

Consider other guaranteed income you may have in retirement. Pensions have gone by the wayside in recent years but some professions — teachers, government workers and hospital workers, to name a few — still rely on these retirement plans to help cover the cost of living in their later years. Annuities are other forms of income you may have.

4. How much will you have in retirement savings?

Once you've determined out how much you'll likely spend for how long, and what your annual income will be, you can see the gap that needs to be covered with savings. This is where your money in retirement annuities and other employer-sponsored accounts comes in. Can this deficit be covered with your portfolio assets? If not, the goal should be to make plans now to save and meet your retirement goal.

A general rule used by financial advisors is that you should be able to have a 4% withdrawal rate for your retirement funds in the first year of retirement and then adjust for inflation with each withdrawal after that. In theory, that would allow you to avoid outliving your money over 30 years by not eroding your principal investment while maintaining the retirement lifestyle you want.

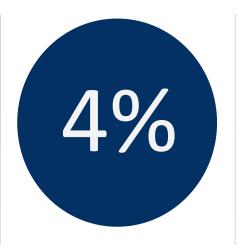
It's always important to adjust your portfolio to make sure it aligns with your retirement goals and time horizons — but it's especially important when you're actually nearing retirement. Take the time to see how much risk you have in your portfolio, and if you're invested aggressively in riskier assets, consider trading some of your stock portfolio out for less risky assets. Stocks are typically more volatile. In other words, you run the risk of losing money right when you're about to start drawing down your accounts.

When you're younger, time is your friend. You can have a bad year in the stock market but you have plenty of time on your side. It's the exact opposite for retirees. They don't have the luxury of time on the asset side.

If you fail to plan, you are planning to fail!



The Benjamin Franklin quote, "If you fail to plan, you are planning to fail," means that a lack of preparation and foresight is a direct path to failure. By not planning, you are essentially accepting a negative outcome, as the absence of a clear strategy leaves you vulnerable to obstacles and wasted time, making success accidental rather than deliberate. The quote high*lights the importance of* preparation to provide direction, increase efficiency, and set you up for success in any endeavor.



The rule of 4

Traditionally, financial advisers, savers and retirees have relied on the 4% rule when working out how much to save for retirement and what kind of annual income retirement savings would provide. The rule was first proposed by Californian financial planner William Bengen in the 1990s.

The theory of the 4% rule

Simply put, the rule says that if retirees withdraw 4% of their savings annually (adjusting this amount for inflation every year thereafter), their nest egg will last at least 30 years. The rule also requires retirement savings to be split equally between shares and bonds.

This method is also used to determine

the lump sum investors need to provide an acceptable annual income when they retire.

For example, assume you are retiring today with a final salary of R480 000 a year. You need a replacement ratio of 90% of your final salary. Ninety percent of R480 000 is R432 000. To ensure you do not use all your saved retirement capital in 30 years, R432 000 should be 4% of your total savings. This means vou would need R10.8 million saved to draw 4% or R432 000 annually. Put another way:

- 1. You need R432 000 a year (90% of R480 000).
- 2. R432 000 must be 4% of your total savings at retirement if you don't want to deplete your nest egg.
- 3. R432 000 is 4% of R10.8 million

Therefore, you need R10.8 million saved at retirement to give you R432 000 a year.

Does it have relevance in a new century?

This retirement theory is not without its critics. Those who question the 4% rule's relevance say it doesn't take into account issues such as taxes or varying investment horizons, and also observe that financial conditions when the rule was

formulated were very different to the reality in this century. For example, Bengen's rule is based on the average long-term annual returns (since 1926!) of shares and bonds being 10% and 5.3%, respectively.

The 4% rule started in the US in the 1990s when interest rates were a lot higher. With rates at an all-time low, the rule has broken down there — another reason to not use rules in planning. In South Africa, rates and dividend yields are low, but still high enough to sustain the rule, but that could also change in time — and highlights the pitfalls of following any rules when planning for retirement.

It is safe to say that while the 4% rule still applies to retirement investing, it needs to be applied differently in South Africa. South Africa is unique in the sense that regulations restrict the income drawn each year, between 2.5% to 17.5% of your investment balance. As a result, investors could have sufficient money to draw the income they desire but are restricted once they reach the 17.5% cap. Therefore, an adaptation of the rule is required in our context.

Also consider that while the basis of the 4% rule is sound, it still might not be relevant to many would-be retirees. The 4% rule is simple mathematics; the less you draw from your capital, the longer the capital will last. Given historical data, the 4% rule suggests that capital can last into perpetuity if the investor only withdraws 4% of capital as income. Mathematically, this is true. Practically, however, the majority of people have not saved sufficient capital to allow them to take advantage of the mathematics.

A broad guideline

The 4% rule is more of a broad guideline to help people make decisions in a complex environment, rather than a hard-and-fast rule when working out how much of your retirement income you can spend.

The Association for Savings and Investment South Africa (ASISA) has also offered guide-

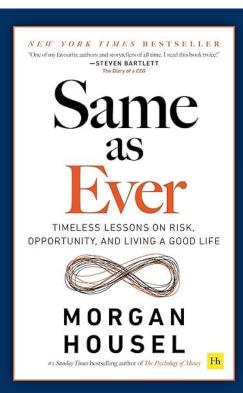


ANNUAL INCOME DRAWDOWN RATE

lines on the issue of safe withdrawal amounts (or drawdowns) from investment-linked living annuities, and produced the table below, which helps indicate how many years it is likely to take before your pension starts declining significantly.

Using the table below, someone who earns an investment return of 7,5% on their investment and uses a drawdown rate of 7,5% can expect to receive a real level of income (that takes inflation into account) for 10 years before their level of income starts to quickly diminish.

Perhaps the last word on the subject is a wise one. It is perhaps applicable to every person saving for retirement. Go to a qualified adviser because, after all, you are planning for a long period of time. If you make an error early in the process, you may not recover.



The New York Times and Sunday Times
Bestseller. As featured on the Dr Chatterjee podcast Feel Better, Live More and
the Diary of a CEO podcast with Steven
Bartlett. From the author of the multimillion copy selling The Psychology of
Money...

HOW MANY YEARS BEFORE YOUR RETIREMENT INCOME WILL START TO REDUCE?

NET INVESTMENT RETURN

	2,5%	5,0%	7,5%	10,0%	12,5%
2,5%	21	30	>50	>50	≯ 50
5,0%	11	14	19	33	≯ 50
7,5%	6	18	10	13	22
10,0%	4	5	6	7	9
12,5%	2	3	3	4	5
15,0%	1	1	2	2	2
17,5%	1	1	1	1	1

*The table assumes that the drawdown percentage income selected will be adjusted over time to maintain roughly the same amount of real income after inflation (in this case using a rate of 6.0% per annum). Once the number of years in the table has been reached, the income will start to diminish rapidly in subsequent years. Source: Asisa

Same As Ever will arm you with a powerful new ability to think about risk and opportunity, and navigate the uncertainty of the future. When planning for the future, we often ask something like, "What will the economy be doing this time next year?" Or we want to know, "What will be different ten years from now?"

But forecasting is hard. The important events that will shape the future are inherently unpredictable.

Instead, we should be asking a different question: What will be the same in the future as it is now?

Knowledge of the things that never change is more useful, and more important, than an uncertain prediction of an unknowable future.

In Same As Ever, bestselling author
Morgan Housel shares 24 short stories
about the ways that life, behaviour,
and business will always be the same.
As you see familiar themes repeat
again and again in the years ahead,
you'll find yourself nodding and saying, "Yep, same as ever."

With this new knowledge and confidence, you will be on the path to living a good life.



Marco Polo (born c. 1254, Venice [Italy]—died January 8, 1324, Venice) was a Venetian merchant and adventurer. He travelled Europe to Asia in 1271–95, remaining in China for 17 of those years. His *Il milione* ("The Million"), known in English as the *Travels of Marco Polo*, is a classic of literature.

The Power of Paper: How Paper Money Shaped the Modern Economy

The evolution of money has transformed not only how people trade and store value but also how entire economies function and expand. Among the most revolutionary financial innovations is paper money, a concept so novel in its early days that it left even the most well-traveled Europeans astounded. Paper money is not just a physical object—it represents trust, authority, and the power to scale an economy beyond the limitations of metal coinage.

Marco Polo, the 13th-century Venetian merchant who journeyed through Asia and chronicled his observations in a book titled "The Book of the Marvels of the World" described one innovation which he witnessed: to him no innovation seemed more unbelievable than the Chinese use of paper money. He was so amazed that he warned his readers they might not even believe him. Polo had witnessed firsthand one of the world's earliest uses of government-issued paper currency during the Yuan Dynasty, under the rule of Kublai Khan. What seemed fantastical to Polo was, in fact, a glimpse into a profound economic innovation.

Trust and the Concept of Value

At its core, paper money is built on a simple but powerful concept: money has value because we agree it does. Unlike

gold or silver coins, which carry intrinsic value due to their material, paper money is only as valuable as the trust people place in the issuing authority. Money's physical substance be it paper, cotton fibres, or modern plastic—is polymer not what gives money its power. Instead, it

is a shared belief in the legitimacy and stability of the issuing government or institution.

This is exactly what made the Chinese system so revolutionary. Rather than hauling around heavy copper or silver coins, merchants could carry lightweight notes representing a promise of value.

These notes were backed by the state, and their acceptance was enforced by law. The efficiency this created for trade and taxation was immense.

China's Innovation

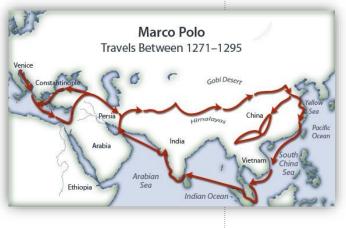
Paper money in China predates Marco Polo's visit by several centuries. The earliest known use of paper currency was during the Tang Dynasty in the 7th century CE, but it was during the Song Dynasty (960–1279) that the use of paper money became widespread. The government, recognizing the logistical challenges of moving heavy metal coins over long distances in a growing economy, began issuing "jiaozi", an early form of promissory note.

The Yuan Dynasty under Kublai Khan further institutionalized the system. Marco Polo described how the emperor commanded the use of paper notes and even threatened severe punishment for those who refused to accept them. The state's monopoly on currency and enforcement of its use created a cohesive and controlled monetary system that was far ahead of its time.

The European Catch-Up

While paper money had existed in Asia for centuries, Europe did not adopt similar practices until much later. European economies of the Middle Ages still relied heavily on metal coinage. It wasn't until the 17th century that Europe saw the introduction of modern banknotes, beginning with the Stockholm Banco in Sweden, and later with the Bank of England, established in 1694.

Why did Europe take so long? One reason was the difficulty in establishing trust. Unlike in China, where a powerful central authority could enforce monetary policies, medieval Europe was fragmented, and trust



in a piece of paper representing value was difficult to establish without strong institutions to back it. However, as banking systems evolved and governments strengthened, confidence in paper money grew.

Paper Money and the Expansion of the Economy

The true genius of paper money lies in its scalability. A government can print money more easily than it can mine or mint precious metals, and this allows for greater flexibility in managing an economy. Paper money enabled economies to expand by easing trade, facilitating tax collection, and making financial transactions more efficient.

However, this same power has risks. When too much money is issued without regard to economic fundamentals, it can lead to inflation or even hyperinflation, as seen in historical cases like Weimar Germany in the 1920s or Zimbabwe in the 2000s. The balance between trust and overreach is delicate. That's why modern central banks play such a critical role—they are tasked with managing money supply in a way that maintains public trust and economic stability.

From Paper to Digital

Today, much of what we use as "money"

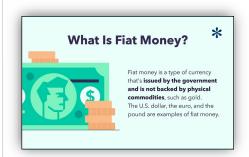
exists only in digital form—as numbers on a screen or code on a blockchain. Yet the underlying principle remains the same: trust. Whether it's a paper note, a credit card transaction, or a cryptocurrency, its value is derived from collective belief and institutional backing.

Governments and central banks are now exploring Central Bank Digital Currencies (CBDCs)—digital equivalents of fiat currencies* (see right) designed to combine the trust of traditional money with the convenience of digital technology. This is yet another leap forward in the story of money, building on the foundations laid centuries ago by paper money in China.

Conclusion

The invention of paper money was not just a financial innovation—it was a revolution in how economies function. It introduced the idea that value could be abstracted, stored, and transferred through symbols backed by trust rather than substance. From Marco Polo's astonishment at Chinese banknotes to today's experiments with digital currencies, the legacy of paper money is clear. It enabled the creation of large-scale economies, centralised taxation, and sophisticated financial systems—all of which form the bedrock of the modern global economy.

The invention of paper money was not just a financial innovation—it was a revolution in how economies function



Money, money, money

Paper money: we withdraw it from the ATM, fold it into our wallets, stick it when it rips, wish we had more — but how often do we stop to think about who designs it, what it's made of, how durable it has to be, and how long it lasts? From the smallest to the toughest, the greenest and the most valuable — read on to discover 10 unusual facts you didn't know about the banknote in your wallet.

Banknotes with character: the rare Grand Watermelon

One of the rarest and most sought-after pieces of American paper money, the Grand Watermelon \$1,000 banknote from the 1890s sold at auction in 2018 for a record-breaking USD2.04 million. Only seven such notes are known to exist, three in private collections. Despite its playful name – which refers to the design of the zeros on the note – the Grand Wa-

termelon has become a world famous icon of American finance history.

No.1 most popular animal: the all-seeing eagle

Many countries have printed gorgeous images of wildlife on banknotes – from the dove and palm leaves on Ethiopia's new 200-birr note, to the renowned African fish eagle found on all of Zambia's kwacha notes, to elephants, lions, and buffalo on South African Rand banknotes.



The Grand Watermelon



So, what's the most popular animal to feature on a banknote? No great surprise to find it's the bird—with the king of them all, the mighty eagle, featuring on no fewer than 41 currencies around the world.

Rugby champions: featuring the Fiji Sevens

Fijians are passionate about rugby, both the traditional 15-a-side format and 7-a-side. The national 7-a-side team, known as the Fiji Sevens, is one of the most successful in the world, winning gold at the 2016 Summer Olympics. The Republic of Fiji created its first ever \$7 bill after the Olympic success, honouring the team by printing two million of a special-edition banknote featuring the players.

Sustainability: what do banknotes and bananas have in common?

There is a drive for note manufactures to be sustainable. In some cotton banknotes, waste from the textile industry is used — short-fibre cotton that can't be used for clothing or furnishings and would otherwise be discarded. The new Philippine peso is as organic as they come, made of 80% cotton and 20% local abacá banana hemp, which is also used for tea bags, cigarette paper, sausage casings, and industrial filters.

Costs of production: how much is a banknote?

The costs of producing paper money depend on many factors, such as the size of the banknote, its security features, and the production quantity. According to the German Federal Bank, a euro banknote costs on average 8 cents to produce, while in the US the Federal Reserve says that the cost of printing paper money ranges from 7.7 cents to 19.6 cents per note.

To art and back: Warhol's money on the wall

Andy Warhol's "Dollar Sign" series from 1982 has become an immediately recognisable icon depicting the moment when art intersects with money and commerce. At the time they were made, the signs reflected Warhol's fascination with mon-

ey as a symbol of status and power. Nowadays, his dollar-sign paintings are worth tens of millions of dollars. As Warhol himself said in his book The Philosophy of Andy Warhol (1975), "I like money on the wall."

Banknote resilience: testing conditions

Throughout their lifetime, banknotes have to be resilient. Low-value notes, in particular — currency that passes through our hands many times a day — need to be robust. Banknote paper must therefore meet standards in special stress tests, including being exposed to 120°C hot air for 30 minutes; put through a washing machine cycle at 95°C and 900 spin revolutions per minute; and enduring five minutes of pressing under a 160°C iron. Once the paper has survived that, the banknotes are ready for anything we can do to them.

The world's smallest: the 10-bani note

Romania's 10-bani coin is one of the currencies that features an eagle, this time wearing a crown. But back in 1917, the 10-bani note that was produced as part of a war series by the country's Ministry of Finance is the smallest banknote ever to be produced in the world. Measuring a miniature 44 mm by 33 mm, the green banknote featured King Ferdinand I on the front and the coat of arms of Romania on the back. Underneath the coat of arms was printed text, threatening counterfeiters with five to 10 years in prison.

Banknote analytics

Nowadays, banknotes are counted, sorted, and verified by banknote processing systems, using sensors to evaluate fitness and authenticity. The sensors also read the banknote's magnetic characteristics and differentiate the images of the various magnetic substances.

170 billion banknotes: removed and replaced every year

When banknotes become heavily wrinkled, damaged, or dirty, security can't be guaranteed. Banknotes are therefore checked and replaced regularly: indeed, each year, a staggering 170 billion banknotes are shredded and replaced with brand-new ones, hot off the press. So, when it's gone, it's gone for good – leaving room for fresh, new money.

Article by Giesecke+Devrient (Germany)

Some had it tucked away in their wallets. Many believed it was a good luck charm. Others even created shrines to the object.

The world's only \$7 banknote was released by Fiji to commemorate the rugby-loving nation's first Olympic medal, when its men's rugby sevens team won gold at the Rio de Janeiro Games.

Ahead of the Flying Fijians' second Olympics appearance in Tokyo, and as the Pacific nation battled a raging COVID-19 outbreak, owners showed off the money with the hope that the team would make history again.