Bond market 101

The shortest, most complete introduction to bonds!

A free report By Susan Hayes, The Positive Economist

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This free report is a series of blog posts I wrote in July and August 2012.

I would love to hear your feedback on this — did you find it useful? Did it help you? Do you have more questions? Feel free to email me at susan@thepositiveeconomist.com
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Welcome to my free report series!

I am Susan Hayes, The Positive Economist.

I am passionate about economics because I find the topic enthralling – but also because it empowers people to make better choices for themselves, and not be at the mercy of doom and gloom fear-mongers. My mission, as I see it, is to destroy hurtful money myths and teach anyone who will listen what they can do, what small step they can take, right now, to improve their financial situation, even in the current climate.

I am Managing Director at Hayes Culleton – an international financial training and educational consultancy company, specializing in eLearning. Hayes Culleton is a client of Enterprise Ireland and a corporate affiliate of Finance Malta and VectorVest.

I am a financial trainer, an author and a speaker.

I deliver financial training for Irish Times Training, Malta Institute of Accountants, Bank of Valletta as well as GillenMarkets.

I am the author of the textbook Positive Economics, with Trudie Murray and Brian O'Connor, and most recently of The Savvy Woman's Guide to Financial Freedom.

I speak on a wide range of topics, at networking events, industry conferences, etc. In 2008, I wrote a digitized module called “Introducing Wall Street to the Classroom” with Ardie Culleton. The module is designed to make the stock market approachable and accessible for second level students and their teachers.

As the “Positive Economist”, I regularly contribute to the national and international media, including The Sunday Times (Malta), RTE, Newstalk and Today FM (Ireland). I talk about matters relating to economics, the stock market, banking, entrepreneurship and finance.

I write the Recovery Index in the Sunday Independent weekly with Nick Webb.
I am a long-time bond investor. As a CFA Level III Candidate, I know how great bonds can be as part of your portfolio, to meet some of your investing objectives. Most people think of bonds as a slow-paced, boring market for people happy with a small, measured return. Wrong! While the bond market is certainly “slower” than the stock market, bonds offer certain advantages that no other security can. When you read this report, you will see why I’m such a fan!

These articles were first published on my blog, www.ThePositiveEconomist.com, in July and August 2012.

I hope you enjoy reading this report as much as I enjoyed putting it together! This report is exclusively for readers and conference or seminar attendees.

To your success,

Susan
An Introduction to the Bond Market

Have you ever heard of the bond market, or the “Irish ten-year bond yield” or “inflation linked bonds” or “fixed income” and wondered what on earth all of this meant?

Here is an extremely short introduction – if you find it poses more questions than it answers, don’t worry! They will be answered in the rest of this report.

What is a bond?

A bond is, in fact, a loan. When you hear about the “national debt”, much of this figure is made up of bonds issued by the government. There are also “corporate bonds”, issued by companies.

When the government needs money but doesn't want to raise taxes or cut spending, they simply borrow it. To do this, they create a security (a product which can be bought and sold on an exchange). Instead of turning to one entity (another government, a Central Bank, an extremely wealthy individual), saying “Hello! We need €5 billion. Could you lend it to us?”, they break up the €5 billion total into smaller shares and those bits of a bigger debt are sold on an exchange.

Whoever buys this security on a stock exchange is, in effect, lending money to the government.

This, in essence, is the definition of a bond: it is a loan of money that is traded on an exchange.

Now of course a loan has to be repaid – with interest! Without interest, nobody would be “interested” in lending their money... The government will issue bonds, clearly stating their maturity date (two-year, ten-year, thirty-year bonds) and the interest payable.

If you own a government bond, the government has agreed to pay you back at a certain date with a certain amount of money.

The fact that bonds are traded on an exchange means that you can see the prices of these securities on the stock exchange: you can check how much it costs for example to buy Irish ten-year bonds. You could also buy a ten-year bond one or two years into it (it would then have become a nine-year bond or an eight-year bond).

Government bonds are for investors who are happy to exchange upside for price certainty. If you buy a stock, there isn’t any cap on the price that it could rise to. But as my readers know, the price of a stock could also fall significantly... without a floor!
On the other hand, with a bond you are assured (providing the issuer doesn’t default) that it will be repaid at a certain date and, when buying the debt, you know how much will be repaid, hence the name “fixed income”.

This is why, while investors buy stocks with an objective of growth, they also buy bonds as part of a diversified portfolio with an objective of regular income and/or preserving their capital.

**What questions should you ask when investing in bonds?**

Before you take the leap, what questions should you ask? How do you determine which bond to buy?

**a. When do you want your money back?**

If you're going to buy a bond, you are buying a government's or a company's debt, with the expectation of getting paid back at a later time with a level of interest.

So of course you should first check what the interest rate is and when the bond reaches its maturity.

**b. What amount of risk do you want?**

The amount of risk that a bond represents is implicitly represented in its yield, which is influenced by ratings from agencies like Standard and Poor's, Moody's and Fitch.

You might have heard about rating agencies in the news recently – some countries losing their prized “triple A” and Irish bonds being downgraded to “junk status”. Rating agencies basically give their opinion about the chance that a bond has to be repaid. If they believe that a country or a company has a deteriorating ability to repay its bonds, they will downgrade their “rating” on those securities.

Now how about the bond yield? The bond yield is the amount of interest that you earn when you own a bond. Just like in the stock market, higher risk is potentially rewarded by higher earnings (note the word “potentially”). So a high bond yield means a high interest rate on a given bond. And this high interest rate reflects the higher level of risk that investors are taking.

Low risk might be represented by government bonds. For example, considering the health of the German economy and the way Germany manages its finances, German bonds would be considered low risk. Governments sometimes default on their bonds, but this is a rare enough event that it would make headlines, and the news and market are likely to sense it long before it happens. The market had been worried about Greece several years before it made headlines, and the media had been talking about it for quite a while...

High risk would be represented by corporate bonds issued by a company whose debt repayments might be in doubt – for example if the company is “highly leveraged”, meaning it has a high ratio of debt compared to its total capital.
So, how much risk can you afford to take? The higher the risk, the higher the return you should make.

c. **Do you want to generate an income along the way, or simply incur capital gain?**

Many bonds come with coupons: coupons are periodic interest payments that are handed out (yearly, or every six months) throughout the life of a particular bond, until the bond is repaid at maturity.

Other bonds don't have coupons: you just get a higher amount of capital back at maturity than you paid at the beginning.

So, which one would you prefer? Income throughout the period during which you hold that bond (and capital when the bond is repaid), or a higher capital gain in one lump sum, when the bond reaches maturity?

One thing to consider here is that coupon payments represent income, whereas repayment of a bond represents a capital gain.

This means that you would have to pay income tax on income from bonds, and capital gains tax from bond repayments. Income tax in Ireland is 20% or 41%, depending on your marginal rate, while capital gains tax is 30% (as of this writing). There is no capital gains tax payable on Irish government bonds for Irish bondholders.

d. **What level of liquidity are you seeking?**

Liquidity refers to how easy it is to sell the bond to another person or entity, i.e. how “fluid” the market is.

Do you want to hold on to that bond until it reaches maturity, or do you want to be able to sell it to somebody else before it reaches maturity?

A high liquidity bond will be one that is quick and easy to sell, while it will be more expensive to sell a low liquidity bond.

**If I'm not a bondholder, how does the bond market affect me?**

People are generally under the impression that bondholders are extremely wealthy people – after all, who could afford to take a chunk of a country's debt? The debt of a country usually amounts to several billion euros.

This impression is reinforced by reports of ministers for finance taking extraordinary action in order to keep the bondholders happy – this is why it was such a blow when [Irish bonds were downgraded to junk status](https://www.thepositiveeconomist.com/bond-market-101).

The truth is, bondholders can be anybody. There is a high probability that you, in fact, are a bondholder.

Are you thinking “I'm not! I never bought a bond in my life and to be honest a few minutes ago I didn't know the first thing about bonds!”

Susan Hayes | www.ThePositiveEconomist.com | *Bond market 101*
Well, insurance funds, pensions funds and companies, as well as individuals, can be bondholders. Even if you haven't bought individual bonds, you might still be an indirect bondholder, through your insurance or pension fund or company pension scheme.

Many funds and companies are very conservative when it comes to managing your money – they would invest in low-risk securities like government bonds.

And in fact, buying government bonds is a very conservative action. Imagine: the year is 2003, the Irish economy is fantastic. Of course an Irish ten-year bond with 4% bond yield and a triple-A rating looks like a sterling investment. The ten-year bond will reach maturity in 2013.

Now who could have foreseen in 2003 that by 2012, one year before the maturity of that bond, the Irish economy would have undergone a drastic change? In 2003, buying Irish ten-year bonds may have been seen as a very sensible thing to do.

When the yield of a government bond rises too high, bond investors become risk averse as they have seen evidence that something is amiss: investors are afraid that there will be a default situation and demand a higher interest rate. To buy time to restore confidence and gain access to money without exorbitant rates, a country may have to seek external finance, just like what happened to Ireland with the bailout. The European Commission, ECB and IMF were asked to help, came in and dictated the fiscal policy Ireland would have to stick to in order to make sure to repay that money.

Now the country borrowed money in the first place because it was taking in less in tax than expenditure: as you may know, less tax income might be a reflection of more unemployed people or people spending less which decreases VAT receipts. Also, raising taxes is a politically difficult decision to take and political leaders might shy away from it.

Still, a government needs money for its day-to-day operations and often turns to borrowing. But when push comes to shove and the ECB and IMF have to intervene, the country raises taxes again, in order to make more money without having to borrow it – and in order to make good on its commitment to repay bondholders.

In Ireland, the Universal Social Charge is such a tax that was introduced as a direct result of Ireland's mounting debt. Taxes have a very direct relation to bond yields, due to a deficit. If a country has a deficit, it will try to get more money in, either through higher taxes, cutting spending or through borrowing, which brings us right back to the beginning of the cycle.

Even if you don't plan to invest in bonds, it is essential that you learn about how the bond market works, since it impacts you, even if indirectly. And besides, you might be a bondholder without being aware of it, through a pension fund for example...
What would make you want to buy debt?

Do you like being in debt? How comfortable do you feel with your mortgage payment, with your credit card debt?

Individual debt makes people uncomfortable. Most of us don’t like owing money and others see debt as a necessary evil, as a way of getting by because they find they have rather too much month left at the end of their money.

But to big institutions, being in a lot of debt is just another day at the office.

Think of debt as a product to be bought and sold

When a government, a company or any other institution chooses to issue bonds (i.e., decides to take out a loan), they prepare an offer: they package their debt with the help and advice of an investment bank, to be sold to a few institutional investors (“big players” like other investment banks). This is called the primary market.

Once this debt has been sold in chunks, with each chunk amounting to several million or billion dollars or euros, it is then divided up and sold on to other institutions and individuals like you and me: it’s “traded” on the secondary market.

When you as an investor buy a bond, you’re not buying it directly from the issuer. Let’s say you buy a bond through a stockbroker: the broker will arrange for that debt security to be sold on to you.

So bonds are not a direct loan: you as an individual investor do not lend money directly to a government or a company. Debt is transformed into a financial product that can be bought and sold on an exchange.

And there are many different types of bonds, as many as there are different types of debt, multiplied by all the different bells and whistles that a borrower can add (or take away) to make the loan more suitable or tailored for the lender’s desires.

What would make you want to buy debt?

Think of it for a second: if a friend of a not-so-close friend called you up and explained they wanted to borrow €2,000 from you, do you think you would jump at the opportunity? Not exactly. More likely, you would be
shocked that they have the cheek to even ask you in the first place. Why would you want to take the risk that they won’t pay you back?

This is why debt is positioned to become attractive to potential buyers. Interest payments that step up or move in line with inflation are examples of those bells and whistles.

Why would you want to buy a bond then? Because bonds are a very good way of conserving money. Let’s take the example of energy: energy is notoriously difficult to stock. This is why we are so dependent on fossil fuels and making the change to renewable energies is proving to be such a headache: because fossil fuels are the best way known to man – until now – to stock energy in order to conserve it. Energy stocked in the form of fossil fuels is so stable that it can be, well, as old as a fossil. You can stock it, forget it, and it will be there when you need it. In the case of wind or sun energy on the other hand, you have to use up this energy as soon as it is produced, because it is difficult to stock. In a way, it evaporates.

Money, unfortunately, also has a tendency to evaporate, or to erode. This is why you would want to stock it in such a way that it wouldn’t be affected (or as little as possible) by inflation, for example. Earning interest on your money is such a way to avoid erosion: if inflation is 3%, but you earn 4% interest, you are able to keep ahead of inflation. If you just stock money, without it earning any interest, you will find that it ends up being worth less and less.

Now you could earn interest by depositing your money in a savings account. In normal times (that is, not in the last five years, or even the last fifteen here in Ireland!), it is a rare savings account that can do much better than barely keep up with inflation. Savings accounts usually earn you around 3% in interest at the most, while inflation was around 3% for services in February 2012.

What if you could get a better return than with a savings account? Bonds might offer you this better return, but of course, they do involve a greater amount of risk. For example an Irish government bond maturing in 2019 or 2020 might have a yield of about 5% on Monday, 8th October 2012.

Therefore, you can buy a loan, backed by the Irish state, and get this interest rate. The capital gain is tax exempt. On the date the Irish government issued this bond, they obtained the money to fund the deficit (the gap between tax and spending). However, it’s not just a loan where you get your money back and a little more, you also get an annual payment, called a coupon.

If you combine the two, you get the “bond yield” – those two words continue to dominate news headlines all over the world....
"But why is it called fixed income if the return can fluctuate?"

At the time when Irish bonds were downgraded to junk status, their yield suddenly went through the roof and took us on a bit of a rollercoaster. Suddenly it looked like bonds were as volatile as stocks, or were they?

If bond yields can fluctuate so much so quickly, why on earth are bonds called fixed income?! And if both the maturity date and the coupon of a bond are fixed, what is the variable that can explain those fluctuations?

Let's list a few common questions that come up often...

"Why is it called fixed income if it can fluctuate?"

My answer would be – define "it"? The first "it", that is, bonds, are called fixed income because a lot of their characteristics are, indeed, fixed when a bond is first issued, never to change again.

These would be:
- the face value or par value. Just like bank notes have a face value, bonds have a fixed redemption value: usually 1000 of a given currency denomination, i.e. €1000 in the Irish case.
- the coupon, which is the interest payment that the borrower pays out to the lender at regular intervals. The coupon is expressed as a percentage of face value.
- the maturity date, when the bond is redeemed and capital is returned to the lender.

For the period that you hold the bond, you will receive the amount of the coupon, calculated on the face value, every time the borrower pays out interest to the bondholders.

This means that you will always receive the same amount of income, since the coupon, and the amount on which the coupon is calculated (the face value), never change.

The “it” that can fluctuate, on the other hand, is the price of the bond – and the capital gain that you can make as a result. Price should not be confused with face value: each bond is “worth” €1000, but you might not buy a bond at its face value (nor redeem it at that price if you sell the bond before maturity).
You can buy it “at a discount”, when its price is lower than its face value, or “at a premium”, when its price is higher than its face value. If you buy the bond at a discount, you will make a gain when the face value of the bond is redeemed at maturity: if you bought a bond with €100 face value for €87, your capital gain is €13.

And yes, sometimes it is an excellent investing decision to buy a bond at a premium, for more than it's “worth”...

"What is the difference between the coupon and the yield?"

The yield represents the return that the bond can bring you on an annual basis until maturity, whereas the coupon is the amount of money that you receive into your account annually or semiannually.

The coupon is subject to the terms of the bond, that is, it remains as set in the terms for the whole life of the bond. The coupon could be fixed, as in the example above, or it could be floating if it moves in line with a variable. For example, there are bonds that offer a coupon that changes in line with inflation or the ECB interest rate. But the way it changes with those variables would be decided at issuance and would not be modified (unless there was such thing as “an embedded option” involved in the agreement, but let's not get into that!).

The yield is a function of the varying price of a bond: it calculates your return if you were to buy the bond at that point, factoring in the coupon and the price of the bond. If the price of the bond decreases, the yield increases, and vice versa.

This is because the yield is comprised of both the coupon and the capital gain that a bondholder can expect, if they hold the debt security to maturity. If I buy a bond that has a face value of €100 and a 5% coupon bond, at a price of €87, I will get the €5 per annum as well as €13 at the end of the life of the bond, when it is redeemed “at par”, that is, the aforementioned €100.

The yield that is most often quoted is the yield to maturity. This measure of a bond's return assumes that I hold the bond to maturity: that is, I don't sell before maturity, but I wait until it is redeemed.

The annual yield to maturity factors in the coupon and the portion of the capital gain that I am entitled to for holding that bond. Of course, I won't get any of that capital until maturity, but the portion of this capital I would be entitled to on a yearly basis is still added into the calculation.

Calculating the yield allows you to compare otherwise incomparable bonds: how do you decide between a 10-year bond with a 5% coupon selling at a discount and a 30-year bond with a 4% coupon selling at a different discount? Calculate their respective yields and you know what return you can expect from each, putting them into an “apples-to-apples” comparison.
“And why would the price of a bond go down?”

Let's take an example: one bond is issued with a 6% coupon at a certain time, and six months later another bond of the same maturity is issued by the same issuer, but with a 4% coupon.

It might be because interest rates have fallen in the meantime: the issuer will take advantage of this to get a lower interest rate on their loan and decrease the cost of borrowing. After all, which would you prefer? Paying back a mortgage with 4% interest, or one with 6% interest?

A bond with a lower coupon will provide less regular income than a bond with a higher coupon. Since there are other, higher coupon bonds on the market, buyers will only accept to buy a lower interest coupon if it's selling at a discount, in order to increase their capital gain.

This is why received bonds wisdom says that “Bond prices increase when interest rates decrease, and they decrease when interest rates increase”. Think of it this way: at a given moment, the ECB rate is 3%. Then there is an announcement that it is to rise to 5%. This means that new bonds that are issued at par now will have a coupon higher than 5%, to invite people to buy bonds rather than just save.

Indeed, interest rates rising to 5% would mean that retail banks would be able to offer that rate to their clients on their savings accounts. And if people can get 5% in their banks, they would need an extra incentive for taking the risk of investing in a bond, instead of just putting money in their savings account. This incentive is called a risk premium and takes the form of an increased return.

The slightly older bonds with a 3% coupon suddenly seem less attractive than the newer bonds. So their price will decrease as their risk premium has now contracted. Another way to make sense of that statement would be: “The price of older bonds will increase when the yield on the newly issued bonds decrease, and the price of older bonds will decrease when the yield on newly issued bonds increase”.

One of the other myriad reasons that a bond price might go down is if this bond is perceived as riskier (and there is a myriad reasons why that could happen too!).

“Why do notations by ratings agencies influence the yield of a bond?”

Would you buy a Greek bond these days? Many investors would decline, considering the poor credit quality of Greece at the moment. Or perhaps you would only accept to buy it with a high risk premium: that is, a high yield.

Talks about the Euro-crisis in the media have revolved a lot around notations by ratings agencies (Standard and Poor's, Moody's, Fitch). The work of these agencies consists in regularly issuing an informed opinion of the quality of bonds that are on the market. They will compile a report to let investors know whether issuers of bonds are reliable or whether they might be feared to default on their loans.
If a question begins to arise as to whether an issuer should be downgraded, ratings agencies put this issuer on “negative watch”, which means they are more likely than previously to give this issuer a riskier label... This could take then go on to manifest itself in the form of a full blown “credit downgrade”.

This means that bonds issued by this institution are perceived as riskier investments. With this extra risk, the price of this issuer's bonds may fall. As you know now, a lower bond price is reflected in an increased yield, in order to compensate investors for the risk they are taking with a higher return.

“But when do I pay attention to the yield, and when do I look at the coupon?”

Firstly, it (literally) pays to examine the tax implications of buying bonds. In Ireland, you would pay capital gains tax on the capital gain (unless the debt security was a government bond) and income tax on the income. This may lead you to look for coupons over capital gain or vice versa.

All in all, the yield is the actual return on investment that you would make (if you held that security to maturity). It is therefore an indicator that you would be interested in when considering buying a bond.

Now of course if you were planning to sell a bond that you currently own and buy another one to replace it you would also pay a lot of attention to yield.

But if you hold on to the bonds you have and have no intention of selling them or buying new ones – if you use bonds as a way to generate income, because you are retired for example –, don't let yield fluctuations worry you (unless the question of default is a serious concern).

You will keep on earning the same coupon throughout the time that you hold the bond, and since the bond will be redeemed at maturity, the capital gain which you have locked in also doesn't change.

This is why, notwithstanding fluctuations, bonds still sit in the fixed income asset class.
Who issues bonds and why?

Now that you know why you would want to buy bonds, and what influences the return a bond can bring you, why not have a look at the other party's point of view?

In other words, why do bond issuers borrow, and what do they do with the money?

Understanding what kinds of things your money will fund, and why governments and companies turn to lenders, helps you have a better informed opinion when it comes to picking a bond.

Of course, you might not be able to know for what exact purpose that particular loan will be used. But before you invest in a bond, you would gather information about its issuer: what have they done in the past? What projects do they have in the pipeline? If it's a country, how are their public finances managed? If it's a company, how do the leaders take decisions?

After all, the bond yield doesn't give you the answers to these questions…

So, why do institutions issue bonds?

**Corporations: capital, tax benefits and maintaining shareholder equity**

Corporations might want the money to invest in new material or build new plants, to expand and improve their operations, or because they want to grow big and grow now in order to keep ahead of competitors.

As a result, they can't wait, or don't want to wait, for the money to collect before they can invest. Taking on debt might be a strategic decision that a company takes without ever actually needing the money: it's simply a route to develop faster.

To meet its financial needs, a company could ask a bank for a loan, could issue more stock, or could issue bonds. Each strategy has different advantages (there is also the strategy of operating at a higher level of sales, profit and efficiency, but of course this doesn't directly have to do with financial markets).
**Borrowing from a bank**

If a large organization wants to borrow all the money needed from one bank, the big question is – if you want to borrow a lot, will the bank agree, and will it have the capital to allocate for that? An additional concern is that, in this context, the bank would be the only buyer: as a result it would hold a lot of power over the company.

Instead, with lots of “little bondholders”, a company can power ahead with whatever it wants to do as long as it can make good on its debt repayment agreement – whereas one supplier of capital is much more likely to put a company under more stringent scrutiny… and for good reason.

That is why a huge multinational like Nestlé might prefer to issue bonds instead, raising all the money it needs from thousands of people in very little time.

**Selling more shares**

If you want to issue more stock (that is, sell more shares), the problem is that is "dilutes shareholder equity". In other words, it makes the share of each shareholder less valuable as the profits have to stretch across more people. If the company doesn't increase its capital, but only issues more shares, it means each share is worth less: if the size of the pie doesn't change, but the number of people partaking in it is higher, everybody has to claim a smaller slice of the pie.

**Issuing bonds**

Bondholders on the other hand are creditors: once the company has paid back its debt, their relationship to the company comes to an end. The company might prefer to just benefit from lenders' money, for a definite amount of time, and would be ready to yield other advantages in return for the loan. What's more, interest payments that the company would have to pay out regularly to its bondholders are tax-deductible.

This is interesting for potential bond buyers, for several reasons:

- paying out interest on bonds is an obligation from the moment it's enshrined in the offering agreement; whereas paying out dividends to shareholders is optional.

You might remember a few months back that Apple finally paying out dividends to its shareholders was huge news, as it would have been the first time in seventeen years.

- if the company files for bankruptcy, bondholders, as creditors, are first in the “pecking order”. They are paid back first (if there is any money left), whereas shareholders might never be paid back at all.
And you – should you buy stocks or bonds?

But a shrewd investor might say "Wait a minute – this company needs more money because it is going for growth. Instead of buying this company's bonds, why don't I buy its shares? If this company grows, its shares will become more valuable, so I might be able to sell them in a few months' or years' time at a nice profit…"

Indeed you could buy stocks, but you shouldn't disregard bonds, and this for several reasons: the stock price could fall and there is no guarantee that it would rise, whereas bonds still provide fixed income. So you might have a stock strategy on top of your bond strategy, but don't think stocks and bonds are competing financial products: they are complementary. They serve different objectives. The question is not "Should I buy bonds, or should I buy stocks?", but "What proportion of bonds and stocks do I want in my portfolio?"

Countries and local authorities: to fund deficits, to fund projects, to smooth out cashflow

The first thing you might have thought of when I mentioned countries, would be the national debt that is used to fund the deficit. Indeed, this might be the most pressing financial need of several governments at the moment, and the one we hear about in the news all the time.

The recession has become synonymous with national deficit, as the expenses of governments have risen with the costs of the live register, while revenue dwindled since governments were taking in less tax.

And then there are developmental reasons to borrow money and issue bonds – a country or a local authority might have a particular project to fund.

It might be a project that will bring in revenue, and so will pay for itself: an airport that will charge airlines, shops and passengers to use it, a motorway with a toll system, etc.

Or it might be a project that is needed now, but will be funded by tax over time: you might want to provide users with better infrastructure now and there simply isn't the time to wait for tax revenue to fill the gap.

Perhaps you remember the example of Laois's growing population and the need to invest in roads. The government could issue general obligation bonds to bring in money today and the money would be repaid with taxes collected over time, as the people living in Laois will continue to pay taxes in the form of Pay & Display parking, etc. In this case, bonds serve to smooth out cashflow.
"Does it make any sense to buy a bond at a premium?"

Bonds are issued in small denominations, making them more easily tradable on an exchange than a lump sum in the order of billions. And just like bank notes, bonds have a face value. The similarity ends there, though, because contrary to a bank note, the price of a bond can be different from its face value.

**Bonds trading at face value, at a discount, or at a premium**

When you buy a bond, it is a rare occurrence that you will buy it exactly at its par, or face, value. More often than not, you will buy it for either less than its face value: at a discount; or for more than its face value: at a premium.

Bonds might trade at a discount, resulting in an increased yield, so as to compensate investors for a riskier investment.

Some bonds, called zero-coupon bonds, trade at a discount because they don't have a coupon. But they still earn you interest: instead of this interest being distributed in the form of an annual or semiannual coupon, it is paid out all at once when the bond is redeemed at maturity. So you would buy those bonds for less than their face value, and the difference between the price you paid and the face value represents the amount of interest, or the nominal return on investment, that will accrue until the face value of the bond is redeemed at maturity.

Other bonds might trade at a premium, that is, for more than their face value. As the price of a bond is reflected in its yield, a premium price would eat into the yield. Now buying a bond for more than it's worth does not mean you're getting a bad deal! Indeed, there are many sound investing reasons to buy a bond at a premium.

**Because you are interested in income, more than capital gain**

Buying a bond at a premium means that, at the moment of buying, if you are intending to hold the security to maturity, you are signing up to make a capital loss: you are shelling out more money than you will get back when the bond is redeemed, since a bond is redeemed at face value.

But this does not mean you are losing money: if this bond has a high coupon, you might make up that capital loss in income, since you will receive the amount of the coupon every year.
Let's take the example of a German government bond reaching maturity in 2020. Its coupon is 3.25, its “offer” price (the price you pay when you buy it) is 116.948 – let's round that to 117. This price is expressed as a percentage of its face value: 117 means 117%, or 117 for a face value of 100.

If you buy this bond, you are making a capital loss of 17: you pay 117 for something that will bring in 100 when redeemed. You are aware of this capital loss when buying: this is not the same as default. You know you are signing up to that.

But in the meantime, until it reaches maturity in 2020, this bond will also bring you 3.25 annually in income, over 8 years. That's a total of 3.25×8 = 26.

You lost 17 in capital, but you made 26 in income: the difference is a positive 9. So you didn't lose money at all – and if we were being technically correct, we would have to account for the interest that you could earn on those coupons also: as the bond yield calculation assumes you will reinvest the interest you earn as well.

So the first reason to buy a bond at a premium would be because you are interested in income, and you are prepared to take a capital loss, as long as it's compensated by income.

**Because you prefer safety**

But let's take a look at that bond's yield: it's tiny at 0.918 – not even 1%! This happens a lot at the moment: we see a lot of tiny short term yields of less than 1%. That's less than inflation across the Eurozone, including German inflation.

If you buy this bond, your purchasing power is not going to go up, on the contrary – you will be losing purchasing power because the return that you're making on the bond cannot keep up with inflation, assuming that inflation is above your yield. And inflation hardly ever stays as low as 0.918%... particularly in a climate of widespread quantitative easing.

Now isn't that in total contradiction with what I was saying earlier, namely, that buying bonds is a good way to preserve capital, to protect your money from the erosion that inflation is responsible for?

So obviously somebody buying that bond wouldn't do it because they want to “grow” their money, that wouldn't be their strategy. Their strategy would be dictated by market conditions at this moment in time: they have a choice between, say, German or Greek debt (if we lived in a “two-bond world”). Which one is most likely to be paid back? Obviously German debt – and the low yield of that German bond reflects that.

This is called “flight to quality”: investors are afraid some issuers might default, so they are buying safer debt. The more money investors pile into German debt, the higher the demand, the higher the price – this pushes down the yield.
So what is happening here? If people are not buying bonds to preserve their money from inflation, and if more people buying German debt pushes prices up (resulting in a capital loss for bond buyers), why on earth are investors still choosing what might seem like a bad bargain?

What is happening is that, due to current circumstances, people are buying just to preserve their capital (not completely, since they're taking a slight capital loss when buying). They're even willing to let go of purchasing power at this stage in an attempt to protect their money however they can. So they're sacrificing purchasing power over the security that German debt represents, and the promise of at least getting their money back.

And what if the Euro broke up?

And the third reason... Well, this wouldn’t have even crossed the minds of investors ten years ago, but this question weighed heavily on their decisions in the summer of 2012. In the eventuality of the Euro breaking up, what would happen?

In the scenario that the Euro breaks up, the German Euro would become re-denominated and would become the German (or Deutsche) Mark. Now we would all be expecting the mark to absolutely appreciate in that context: the German economy is much stronger than that of several European countries at the moment, they have weathered the crisis with their treble A credit rating intact, they have very strong exports and have been experiencing economic growth.

So the German Mark would appreciate and rocket in value, in comparison to the Irish Punt.

Now if you are an Irish citizen owning German debt re-denominated in marks, the value of this portion of your money would be protected, and in fact would show significant growth when you repatriate it against the punt. If this was to play out, you would be delighted – relieved – to have bought German debt, even at a premium.

However, you must consider if the possibility of this threat is high enough to risk losing purchasing power, in an environment of record low interest rates and quantitative easing? For each trade, there is risk and return…
Where to find information about bonds

In the previous article we took the example of a German bond maturing in 2020 – it had a 3.25% coupon, it was selling at 116.948 and its yield was 0.918%. Now where did I come up with an example like this? I didn't make it up – I looked it up.

And where do you find that kind of information about bonds?

How to read a bonds table

First, you could have a look at the documents that are released by government agencies, listing their bonds outstanding.

Just a quick note about vocabulary: a bond is called a bond when it has over ten years to maturity. When it is between one and ten years away from its maturity date, it's called a note, and when it's less than one year to maturity, it's called a bill.

So a 2013 Irish bond was a bond when it was issued in 2002; from 2004 it was called a note, and now, with less than one year to maturity, it's called a bill.
This bonds table, available on the NTMA's website, lists each bond issued by the Irish government, outstanding as of today (that is, this post is based on the document available on Wednesday, June 27, 2012, but if you look it up at a later date, the document will have been updated).

From left to right, you can read different characteristics of the bond: first its coupon, then its name, then its ISIN. The ISIN is a number that identifies the bond and it's that number you would quote to a broker when buying or selling the bond. Then comes the maturity date, and then the Irish Stock Exchange closing price.

On Tuesday, June 26, 2012, the first bond listed in the document, the 2013 Irish Treasury bond with a 5.0% coupon, was trading at a premium: its price on the Irish Stock Exchange (ISE) was 100.49.

As a result, its yield to maturity, at 4.33%, was lower than the coupon, since the premium price means somebody buying that bond would take a capital loss, eating into their return.

On the contrary, the 2019 Irish Treasury bond with a 5.9% coupon was trading at a discount (closing price of 93.77), so its yield to maturity was higher than the coupon at 7.01%. The capital gain that somebody buying the bond would make is factored into the yield.

And finally the last column shows the amount outstanding for a given bond.

Note that on this page of the NTMA website, you can access more information about a given bond, by clicking on the green link stating the coupon and the maturity date: you will access that bond's offering circular, or prospectus, a document that lists the characteristics of the bond when it was issued.

**What you see on Bloomberg**

You must have heard of Bloomberg, an authoritative source on financial markets. Their website is a wealth of information, both on stocks, bonds and other securities, and on world news that affect financial markets.

You can find detailed information about bonds (government bonds and corporate bonds) on their bonds page: click Market Data > Rates and Bonds.

There you will find government bonds listed by country (USA, UK, Germany, Japan, Hong Kong, Australia and Brazil) and, for each country, by time to maturity.

The bonds that mature first come first in the list: you will notice that they're listed as “3-Month, 6-Month, 1-Year, 2-Year” etc. Then the following columns have the coupon, the exact maturity date, the price (the "ask" or "offer" price) and the yield. The table also lists price changes and the time at which the information was captured.
What you see on Investing in Bonds Europe

Another excellent source of detailed information about bonds is Investing in Bonds Europe. That is where I found the data on the 2020 German bond I analyzed in the previous piece.

On the Home page, in the left sidebar, click on "Governments", just below "Markets". Below a short article about government bonds, you will find a link to "Government Markets In-Depth".

When you click this link, you will be taken to a search page, where you can specify a country or a maturity date to start looking for a bond; you can also click on "Display all European Government Bonds".

To find the 2020 German bond I used as an example previously, just choose "Germany" in the drop-down menu "Issuing country" and "2020" in the caption "Maturity date". You will be led to a page that lists all German bonds outstanding, maturing in 2020. The 3.25 2020 German bond (or, more accurately, note) is the first one on the list.
You see that Investing in Bonds also lists the issue date, rating agencies' ratings when they are available, and both bid and ask prices.

The "bid" price is the price at which a bondholder can sell a bond, and the "ask" (or "offer") price is the price at which a prospective bondholder can buy a bond. This makes sense when you think that you are “asking” for a bond when you want to buy it and are taking “bids” from other interested parties when you want to sell the bond.

If you are thinking of investing in bonds, it would be a good idea to bookmark those websites...
Duration - Yes, you do need to know about it!

Oh no! Not another variable... Wasn't it enough already to know about the bond price, its maturity, its coupon, its yield and whatnot?!

Sorry, but duration is important... You know why the price of a bond can change, and why that influences its yield. But do you know by how much the price and the yield can change? In other words, can you measure the volatility of a bond? Yes, you can – with duration. High volatility means you might end up on a rollercoaster; with low volatility, you might have found more stability.

And depending on your investment strategy, you might willingly go after the rollercoaster, or on the other hand be content with a low volatility investment.

**Duration tells you whether your bond is a rollercoaster or a becalmed ship**

Duration lets you know how exposed to volatility you are when buying a given bond. It is another measure of the amount of risk you are taking.

First of all, although you could be excused for confusing the two, duration is not synonymous with maturity! Maturity is the time until the capital of the loan is repaid and with each passing day, maturity shrinks to zero as the maturity date is fixed when the bond is issued. Duration, on the other hand, is variable in both directions...

**How long before this bond pays for itself?**

There are two types of duration, following two different calculations: let's talk about Macaulay duration first. Macaulay duration measures the amount of time it takes before a bond “pays for itself”. That is, Macaulay duration represents the amount of time it takes for cash flow(s) from the bond (usually, coupon payments) to cover the gross “expense” of the bond.

When you buy a bond, you incur an expense: the bond has the potential to bring in money, of course, but on the day you buy the bond, you have to part with money in the first place. So the balance is negative: by buying the bond, you have made a dent in your money.
But a bond will bring in money, in coupons and capital repayment at maturity. Macaulay duration calculates how long it will take for money earned from the bond to cover your expenses, so to speak: how long before the balance is restored between the money that left your account when you paid for that bond, and the money coming into your account and that the bond is bringing you.

That allows an investor to make sure that, given their investment strategy, a particular bond will not just be a “money pit” but will actually bring in money – and when.

*In fact, the raw data of how many years it takes to recoup your investment often stops an investor taking an action that they hadn’t quite thought through!*  

**How sensitive is this bond to interest rate changes?**

Modified duration on the other hand measures how sensitive a bond is to changes in interest rates. While Macaulay duration is calculated in years (which makes intuitive sense for a "duration"), modified duration is calculated in percentage (…which doesn't make as much intuitive sense).

This percentage represents the expected percentage change of the bond price when interest rates change. Modified duration tells you how much of a swing the bond price will take for a 1% change in interest rates (whether up or down).

Now there are two things to remember:

- Interest rates often change.

When interest rates increase, this means lenders can charge more money in exchange for lending the money they have (borrowers, on the other hand, have to pay more for borrowing money).

When interest rates increase, new bonds that are issued at that time have to match the new, increased interest rates. This means that, on the market, there will be two types of bonds (simplifying a lot!): new bonds with a higher income potential (higher interest rate that lenders earn), and older bonds, issued at a time when interest rates weren't so high.

These older bonds only had to match a lower interest rate at the time they were issued: this means their potential for generating a return (based on their coupon) is less than the new bonds. As a result, investors will choose the new, more rewarding bonds, and there will be less demand for old, less rewarding bonds. The price of those older bonds will decrease.

(Now this is just an explanation of the mechanism by which interest rates might influence bond prices – in reality, due to all the other things that happen in the markets, interest rate changes might have less of an impact on prices, yields, and indeed, duration!)
It's the exact opposite if interest rates decrease: older, more “return generating” bonds will be more attractive and the demand for them will be higher than for newer issues, all else being equal, resulting in an increase in their price.

How much prices will decrease or increase when interest rates change will be reflected in each bond's duration.

And the price of a bond is reflected in its yield.

Modified duration allows you to analyze to a certain extent whether the yield will fluctuate a lot or a little if interest rates change at a later date. Modified duration is, then, a measure of the volatility of a bond's price (and hence of its yield).

“**This bond will pay for itself in 17.54 years**”

Let's take an example; I buy a bond at face value, for €1000. Its maturity date is 20 years away. It has a coupon of 5.7%.

So when I buy the bond I part with €1000 (plus costs, but let’s leave those out for the sake of the example). Every year, I earn 5.7% of the face value, that is, €57. It will take \( \frac{1000}{57} = 17.54 \) years for the bond to pay for itself. After those 17.54 years I have earned back the €1000 I spent originally: €57 a year, times 17.54.

The rest of the money coming in from the bond after that (remaining interest payments and capital repayment at maturity) will represent my “profit”.

But if I sell the bond before the 17.54 years are elapsed, I have to ascertain whether I'm not, in fact, losing money on the sale – because I haven't recouped my expenses yet. Of course I might be able to sell the bond at a premium and this would contribute to my profit. But what if I can't?

On a technical note, the Macaulay duration examines only the “present value” of the coupons: that is, how much the coupons are worth when you don't consider the impact of reinvesting them.

Indeed, a lot of calculations regarding bonds assume in their formula that interest is reinvested, earning bondholders interest on interest.

Admittedly, I have not examined what the impact of reinvesting the coupons would be on the payback period. If I am able to reinvest coupons at a similar rate, I would cover my expense more quickly and this could reduce duration.

But this would be assuming that I can, in fact, find another investment with a similar rate. However, in the current environment of “on the floor” interest rates and based on the fact of life that interest rates are always changing, that is something that I’m happy to mention, but not calculate in this example.
How long will you be vulnerable, and by how much?

So even before you buy a bond, you can look at its duration to know the amount of time before you recoup your costs, and how that bond's price will be affected by changes in interest rates – should you want to sell this bond before it pays for itself, are you going to get your money back?

A longer time to maturity means there is a longer stretch of time during which a bond is sensitive to fluctuations in interest rates. Indeed, the longer you hold a bond, the more likely it is that interest rates will be changed in the meantime.

Take the above bond: 17.54 years duration means that, during 17.54 years, you the bondholder are exposed to changes in interest rates, since they might affect negatively the “profit” you were expecting from the bond. Should you sell the bond before the 17.54 years are up, you might make a loss on the sale.

And the longer the time to maturity, the riskier the investment. In fact, in most (but not all) cases, time and risk are “positively correlated” – in plain English, this means that if one goes up then so does the other.

Of course, if an investment is riskier you stand to lose a lot in adverse conditions... But you also stand to win a lot if conditions are favorable! Imagine interest rates go down, making your older bond more attractive: if it has a high duration, its price should be set to increase by a lot!

But to a shrewd investor this will not come as a surprise, however pleasant: they will have calculated this before buying the bond, and they know how their bond is likely to react when interest rates change.
How does the state of the economy influence the bond market?

Where do you find information, not just about bonds themselves, but about all the factors that affect the bond market? And what do you do with it?

When I lead investing seminars, many attendees have the nagging feeling that they should follow the news more, or that they should be able to make better sense of it. But they feel powerless as they are bombarded with news all day, every day: how can you possibly choose who to listen to and sort through the noise of infotainment, let alone digest the sheer amount of information you are force-fed every day?

Here are a few pointers, or: where to find out about everything you've ever wanted to know about economic indicators and financial markets, but were too afraid to ask!

Choose perspective and context over raw data

Following economy news is like building a jigsaw puzzle: one piece with its jagged edges and its jumbled colours won't make any sense. It's only in the context of the other pieces that each bit takes on meaning.

Gathering information happens over time. It's not so much what you read in the papers today, as what you read today, compared to what you read yesterday, and last week, and last month. A statistic will only be of interest if you can make sense of the way it evolved: a number alone won't tell you whether it is up or down from last time.

It is the same difference as between a movie and a movie still: the movie still might look very good, but doesn't tell you much about the action. It might even give you the wrong impression!

Where do I start? What do I watch?

Well, inflation is a good place to start. Inflation is a measure of the way prices rise over time. It is correlated with economic growth: mostly (although not always), rising prices reflect a growing economy. If supply can't completely keep up with demand, prices will rise since there isn't enough of a commodity to satisfy all the demand. Then a seller can afford to ask a higher price for the same amount of goods.
Since inflation is a measure of rising prices, keeping tabs on prices is the best way to measure it. This is done through a consumer price index: the European Central Bank uses the Harmonized Index of Consumer Prices to monitor inflation.

Historically, high rates of inflation have often resulted in troubled times. When people weren't able to buy vital things such as bread because prices were too high, they often took to the streets in protest. Think of the French Revolution – or even hyperinflation in Germany during the 1920s.

As you can imagine, governments keep a very close watch on inflation and use the tools they have at their disposal to keep it within a healthy band.

Where do you find relevant news?

Now the Harmonized Index of Consumer Prices consists of rather too many charts and graphs for most people's taste. So where do you find relevant, reliable economy news that will show you how the economy and the bond market interact?

- **Specialized newspapers**
  You could start with general economy news: Bloomberg, the Financial Times, the Wall Street Journal all offer information and commentary about the general state of the economy, which policies governments are planning and what results these are expected to bring.

- **Rating agencies**
  Standard and Poor's, Moody's and Fitch all have information-rich websites, with their analysts offering their opinion on market developments.

- **Investment research companies**
  I personally work with Gillenmarkets and VectorVest (full disclosure: I have a commercial relation with these companies, although the two links above are NOT affiliate links). Both of these sites offer free and paid information.

- **The "Key economic indicators" page on the NTMA website**
  On this page you will find the latest data about consumer prices and other statistics, specifically for the Irish economy.
Expectations are as important as actual data... in fact, expectations are data!

And then what do you do with all this information? Well the information in and of itself isn't the whole story – once again, what you want is context. What the bond market will react to is – economic indicators not being what they were expected to be.

Indeed, various institutions will publish forecasts about different economic indicators, but forecasts are hardly ever spot-on: they are educated guesses. These forecasts, though, will create expectations. Will inflation rise? Will it rise enough that central banks will decide to do something about it? When actual data is published, it will correspond to or defy expectations.

This was clearly demonstrated recently when the world was waiting for Mario Draghi, the President of the ECB, to drop the ECB rate... and he did.

If data conforms to expectations, this is not a big deal, business will continue as usual, since nobody will need to change course: investors based their actions on what they expected, and their expectations have not been challenged, so they can continue to do what they were doing, strategy-wise. In fact, you might often see the market not changing at all when news is published, as it has been “priced in” – basically the market had behaved as if its expectations had come to pass anyway, so why change when that expectation had, actually, come to pass?

If on the other hand the data that is released is at odds with expectations, the bond market will have a reaction to this – it's the surprise that counts. The magnitude of its reaction will depend on how much the data is at odds with expectations: you might picture it as ranging from a raised eyebrow to a double-take... There will be a small or a big scramble as people, financial institutions, investors adjust their course of action.

And this is why I’m fascinated by finance: it is a living, breathing illustration of the “butterfly effect”. Imagine being able to follow the ripples from a butterfly flapping its wings as they become waves – and possibly a tsunami...

Why you shouldn't fight the Fed - or the ECB!

One ripple that certainly has the potential to rock the boat is when a central bank decides to modify interest rates. The modification is apparently extremely tiny: usually between 25 and 50 basis points. That is, a quarter to a half of one percent... And still, it's one mighty change: ask anybody on a tracker mortgage!

You might have heard the saying “Don't fight the Fed”. The “Fed” is the American central bank, the Federal Reserve. The ECB is its equivalent in Europe, and “Don't fight the ECB” is just as valid a saying! Now what does that mean?
The ECB and the Federal Reserve, as central banks, administer monetary policy: they set the interest rate with which banks benchmark their activity. This target interest rate is not chosen at random, but depends on what the central bank thinks the economy needs, in order to adhere to its inflation target. This is why it makes sense to monitor what the central bank is saying, as well as economy news.

An important concern in setting this rate is inflation: in a strong economy, inflation (and prices) will rise. To curb inflation, a central bank will raise (or “tighten”) the target interest rate. This will increase the cost of borrowing, since banks will have to pay more to borrow this money, and hence charge more for lending money.

This will have the effect of slowing down the economy, since people and businesses won't be able to spend as much as they could, if they were able to borrow money easily. On the other hand, when the economy is weak, central banks will lower the target interest rate, in an effort to spur credit demand and spending, as we have seen since 2008.

Usually, the consequences of a change in interest rates, decided by a central bank, won't be apparent immediately for everybody, but take a few months to a year to be fully felt in the economy. A lowered interest rate (“accommodative monetary policy”) is a policy tool which is used to cultivate stronger economic growth, while a lifted interest rate is an attempt to slow growth and inflation, and can lead to contraction. The effects of the central bank's decision will be felt at some point, and trying to counteract this is futile – this is what is meant by “don't fight the Fed” or the ECB.
Why “making more money” is the worst investment strategy you can have

You now have gathered quite an amount of information since the beginning of the report and hopefully you should now have a much better picture of the bond market. You understand the characteristics of a bond, you know where to find information about a bond and what to look for in news about the economy.

So – now comes the big question. What bond should you pick? What is a good bond to buy at the moment?

Wrong question.

The fallacy of "the" good bond to buy

Well, how about buying a 2020 German bond? You know that, although it's trading at a premium, it has a number of advantages: it is highly likely that your capital will be protected, even though it is unlikely to keep up with inflation; and many people are using this bond as a hedge against the value of their money depreciating in the event of a Euro collapse. That's not too bad, considering other bonds on the market...

But, I hear you say, it's trading at a premium, which means you would incur a capital loss (even though you might offset some of it with the income from the bond); and its real (inflation-adjusted) yield might even be negative – it would underperform that elusive inflation!

Oh – so you mean you wanted to do more than just preserve your capital at all costs?! Why didn't you say so?

The thing is, every time I hear the question “So, what's a good stock / bond to buy at the moment? Any tips?”, I have to cringe. If I got one euro every time I heard it, I would be a rich lady by now. But it's a very dangerous question.

It's like asking “So, how long is a piece of string? What's your opinion?”

People who ask this question have no idea that there are several criteria to judge a bond by. And they don't know what they want that bond to do, let alone what they themselves want to do. They have no idea what objective they want to achieve or what comes with the territory of achieving that objective.

Bonds (and stocks for that matter) are certainly NOT a one-size-fits-all.
For example, I recently bought a high-yield, junk status, corporate bond fund. With an 8% yield, it does more than just keep up with inflation and is diversified to mitigate default risk. Rising prices (and profits), which are delivered by inflation, only serve to decrease the potential for, and amount of, default. Indeed, it's easier to pay back your debt in a currency that is weaker than the currency in which you are generating your own (rising) revenue.

However, I know what investment strategy fits at my stage in life, I know what my investment expectations, my risk profile and my views on inflation are – and I know exactly what the fund actually does.

Now this is the other end of the scale, compared to that 2020 German bond: I have bought a fund (several bonds packaged together), as opposed to an individual bond. I have bought high yielding, rather than investment grade, in a strategic effort to outperform inflation. Does that sound like what you'd like to buy? Oh, you might say, junk status doesn't sound too good – it's money down the drain if they default, and you can't afford to lose all that money.

So you see, “What's a good bond to buy?” is an invitation to submit the hapless asker to a barrage fire of more questions!

There is no one “right bond” to buy. And there is no one “right investor persona” – if you were thinking contrarian investors or investors who invest in "risky" bonds are "wrong", or investors who play it safe are too conservative to actually make any money, you should think again.

You have to compare a bond to your circumstances and your expectations to find the bond most suitable to you, your risk profile and your objectives. But of course to do that, you would need to know what you need and what your objectives are...

Also, bonds will not be a panacea. They are certainly underutilized in many portfolios, but they can't solve every problem! So if you thought the volatility of the stock market meant you were better off investing in bonds, rather than stocks, I suggest that you widen your vision to consider more than just volatility and all that’s involved in investing in each respective asset class.

Bonds can be a great answer to part of your investing strategy, but remember that they have certain disadvantages, compared to stocks. Their coupon won't increase, when a dividend generated by a stock might appreciate; inflation eats into their fixed return; there is the danger of default; and of course, they pay out coupons and eventually mature, which means you have to look for some other reinvestment opportunity.

**The danger of just "wanting more money"**

When I ask audiences what they want from financial markets, they laugh and say “Well sure as much money as I can make!”

Then I say “Are you willing to risk 90% of your investment to get there?”
They suddenly get very sober.

“Making as much money as you can” is NOT an investment strategy, but a recipe for disaster, because it does NOT give you clear guidelines to take decisions by. This kind of vague goal opens the door to panic and hesitation. This means that you are a slave to your emotions, which is the worst thing to be when you are an investor, be it in the bond or stock market.

So many investors have no clear guidelines – they're throwing darts in the dark, and it would be a miracle of pure luck if they hit the bull’s eye.

Imagine that I'm in Dublin and I want to take the bus to the airport. I wait for bus 16 and get on. But suppose it turns out the number on that bus is wrong and the bus is not going to the airport: then I will get off the bus. The reason I got on the bus is no longer there so I get off, and that’s just it.

Or I want, say, Italian food. I walk into a restaurant, but it turns out this restaurant serves Mexican food. The reason I walked into the restaurant, to find Italian food, is no longer there, so I walk out.

It is exactly the same with stocks and bonds. You don't buy or hold them “just because”. You have to have a strategy and certain objectives – and you have to stick to that strategy, not let it gather dust somewhere in a drawer!

If you “just” want more money, are you going to buy a German bond at a premium, or are you going to buy a high-yield bond, or securitized, subordinated debt? The German bond is low-risk and low-reward, whereas the other two are much riskier, with higher potential rewards.

“I want to make more money” doesn't help you make up your mind between any of the above! With the German bond you're pretty sure to make a little more money, whereas with the high-risk bond you might make a lot more money – or lose big time. They will both make more money, but in very different conditions. So, which one do you choose?

To invest in the bond market, you should have timely and measurable goals

Setting effective goals that get you where you want to be is an art in itself – so much so that I have devoted a whole chapter to it in my latest book (The Savvy Woman's Guide to Financial Freedom). You can read a primer on my website. This is true for financial markets, as well as life in general.

Since bonds represent fixed income, you know how much money you will receive and when. In this case – and this only holds for the bond market, not the stock market –, a smart investing objective will include two things: exactly how much "profit" you want to make (not just the revenue, but how much you are prepared to "pay" to reach that level of revenue), and when you want the money (a time range is better than a precise date).
Your investment objective has to be measurable and timely.

Let us take the following scenario:

You are 40, your children are 10 and 13 respectively. It means that in 4 years' time the oldest will be starting college, and for the youngest that will be in 7 years' time. Suppose you invest in bonds to put your children through college. How much will you need?

You need to take into account tuition fees, accommodation if they have to move to a university town, living expenses (food, various bills) for three to four years. Don't forget to add xx% to account for inflation, and then add €xxx for a margin of error.

You now know that, in 4 years' time, you will need €xxx approx., and in 7 years' time you will need €xxx approx. You could receive these amounts in one lump sum when your children begin college, or you could decide that you want to earn the amount corresponding to one year of college, every year, for four years, starting respectively in 4 and 7 years.

Now you are in a much better position to decide what to do with your money, considering how much you have now, and how you can invest that money to reach your target amount in the required timeframe. You can sketch different investing scenarios and see whether they allow you to reach your objective of €xxx in the required timeframe.

You could never do that if your only objective was to “make as much money as you can”.

Of course this is a simplified scenario, since you would have to also ask yourself what portion of your savings or portfolio do you want to keep in bonds, and what will happen if the scenario changes (say, if one of your children gets a scholarship). But you get the idea!

Another scenario would be that you are now 45, and you want to invest in bonds to provide supplementary income when you retire. Now you won't be needing a lump sum, but you will want regular income over several decades (hopefully!). How much supplementary income do you want or need? When would you like to start to receive this income? For how long? Again, considering how much money you can afford to invest now, you can establish a much firmer investing strategy.

You might decide that you want €1000 in supplementary income from your investment in bonds, starting in 20 years when you will be 65, and lasting 30 years (better be on the safe side!).

Now in this situation, you would perhaps also want to invest in stocks, and progressively reinvest your gains in bonds as your retirement approaches. You would also consider what type of pension options are available, the levels of tax relief, etc.

Every time you are faced with an investing decision, you can ask yourself "Will this provide the €xxx I need, in the timeframe that I need it by?" This is a much better position to be in, than just "I want more money". It will allow you to see much clearer in the tradeoffs you will invariably have to make.
Your bond buying checklist

So you now have your investing strategy, you are intent on using it (kudos to you!), and you have decided that bonds should be a part of it.

Here is the checklist you can use to decide which bond or which bond fund to buy:

1. **When is the bond going to mature? Considering your investing strategy, do you need a long-term bond, or a short term note or bill?**

   You will want to know when you get back your capital – will you need the money at a precise date? Then you need a bond that matures just before that date.

   Or if it's a short-term maturity (a note or a bill), how will you reinvest the money? Will you finda similar or better interest rate to reinvest your money?

   Or, depending on your strategy, you might decide that you need a certain maturity, in order to be able to reinvest your money in a specific way when that bond reaches maturity.

2. **Are you trying to accumulate or to preserve capital?**

   To accumulate capital you will need a bond that brings income above inflation. Inflation being around 2% right now (that is, July 2012), you will be looking at yields above 2% in order to achieve that. You might then want to turn to bonds that are not risk-off, but instead you will want to consider those with a greater return and commensurate risk: corporate bonds, bonds issued by governments that have higher costs of borrowing and high yielding debt, assuming that you’re willing to take on that incremental risk.

   Risk-off bonds, like UK gilts, US Treasuries, Japanese JGBs and German bunds, on the other hand, will allow you to preserve your nominal capital currently.

Susan Hayes | www.ThePositiveEconomist.com | Bond market 101
3. Do you want to outperform inflation or are you happy to keep pace with it?

This question is similar to, but not the same as, the above. To keep pace with inflation, you could either buy a bond that offers a rate similar to your inflation expectations. That means the onus of calculating how much inflation is likely to be in coming months or years is on you. Or you could buy a TIPS bond, a Treasury Inflation Protected Security: its coupon moves in line with inflation.

To outperform inflation, you could buy a bond that has a high returning potential, or you could buy a bond fund that has an objective of outperforming inflation. This wouldn't be too difficult in a low inflation context, but at the moment strong inflation is expected since governments have engaged in several forms of quantitative easing (printing money).

When interest rates are so low (as they are at the moment) that it would be difficult to lower them any more, this incentive isn’t boosting demand and so, they simply flood supply by resorting to quantitative easing.

And of course keeping up with or outperforming inflation would mean that the rate of inflation that you are interested in is the one that affects you! A US TIPS bond will follow the US rate of inflation, but this might not be the rate you have to face!

4. Do you want to provide income towards current expenses, or are you happy to leave interest to accrue?

Then you have a choice between coupon bonds that pay out regular income in the form of interest payments, and zero coupon bonds. Like the name implies, zero coupon bonds don't have a coupon.

That is, you still earn interest, but it is not distributed through a coupon. Much like a savings account that you “set and forget”, a zero coupon bond simply earns interest and you get one lump sum at maturity, which comprises of your initial capital deposit plus accrued interest.

Related to this concern is the nature of the coupon: is it fixed, or floating? A floating coupon moves in line with a variable, like a tracker mortgage. Examples of floating coupon bonds are TIPS bonds, or bonds that offer the interest rate of the ECB plus a “margin” e.g. 2% and hence when the ECB interest rate changes, so does the amount of money you receive (the coupon).
5. How is the bond taxed?

As an individual investor, if you buy an Irish government bond and you're an Irish resident taxpayer, you don't pay any tax on capital gain. If you bought an Irish corporate bond on the other hand, you would have to pay capital gains tax.

In any case, you will have to pay income tax on income brought by the bond, that is, coupon payments. Similarly, if you buy any type of international debt and make a profit, you are obliged to pay capital gains and income taxes, whichever apply.

6. Do you need your investment to be liquid?

Liquidity is a measure of how easy and cost-effective it is to sell a bond. If you want your money to be available at short notice, you will choose a bond with high liquidity (on the other hand, think of this: if you need your money fast, are you sure you should be investing?).

Or if you deem it safe to put your money away for a while, you won't need such deep liquidity.

If liquidity was an issue, you would choose a bond with a small bid/ask spread, just like 2020 German bonds.

When there is only a small difference between the offer and the ask price of a bond, it means this bond is very fluid and hence you will find a buyer almost instantaneously during market hours.

7. Are you buying a bond or a bond fund?

When a bond matures, you need to think about reinvesting the money: it means you will have to go through the process of choosing a worthwhile investment all over again. With a bond fund on the other hand, you don't need to worry about that since the fund manager will do that for you, by reinvesting bonds as they mature, assuming the bond fund lives into perpetuity and you are happy with its continued performance.

So individual bonds mature, but a bond fund doesn't: the money is always reinvested as the bonds making up the fund mature, or as bonds are rolled over before they get to maturity. A bond fund also allows you to diversify your investments: you might invest in “risky”, junk status corporate bonds through a high-yielding bond fund, but the fact that the bond fund is made up of many different bonds somewhat mitigates the risk of default: if one issuer defaults, that is only one among many in the fund.

On the other hand, bond funds don't pay out coupon payments, but dividend payments, and they have a management fee.
8. Which currency should you invest in, Euro or Dollar?

The answer depends on where you live, where your business operates, where you want exchange rate exposure or which exchange rate you want to hedge against. I could devote a whole other report to this topic!

9. How is this bond backed?

By a government? By a company? How good is their ability to repay? What assets do they possess that back the bond? In the case of securitised obligations, something else backs your loan: a Public Private Partnership is an example of this. PPP projects created toll roads in Ireland: a separated class of bondholders lent money to the project, and the income generated by the project is used to repay them.

If it was possible for retail investors to buy such bonds, we would call this a “Revenue Bond”. Personally, I believe this would be a good idea.

And of course you won't have forgotten about the subprime products we all read about in 2007: these were “special purpose vehicles”, that is, the “asset” backing the debt was the income generated by the debt via capital, interest and prepayments.

How does this work? In the case of a mortgage-backed security for example, a bank will lend money to house buyers. The bank, instead of just waiting for people to pay their mortgages in order to get its money back, will repackage that debt and sell it on.

Are you surprised that debt could be considered an asset?! Well, the word has a very definite meaning in economics: an “asset” is something that generates an income and is transferable. Debt generates an income, since the lender receives interest, and is transferable, since the lender can sell that debt to someone else.

10. Have a look at the opinion of rating agencies

The job of rating agencies is to identify the bond issuer's ability to repay.
How do you actually buy a bond, in practice?

And now comes the moment of truth – completing your first bond trade!

Of course this is rather theoretical, since you will first have to decide that bonds are what you need in your portfolio, and exactly what bonds are a good fit for your strategy. These are questions only you can answer.

On the other hand, the practicalities of investing in bonds apply to everyone. A bond trade is a bond trade, whatever your investing strategy is.

And in my experience, practical, nitty-gritty questions also hold people back, as much as, if not more than, really tough questions of “What proportion of bonds do I want in my portfolio? And which bonds do I buy?”

Indeed, there is something definitive about a trade that makes people nervous. To make sure that it's not the little details that hold you back, here it is – how you buy a bond, in practice!

**Buying a bond, step by step**

Personally I have always bought and sold bonds over the phone, so this is what I will be referring to here. Also, you will need to have a funded trading account.

First of all, you will need to know the ISIN of the bond you want to buy, as the broker is not going to supply it. The ISIN insures that you know exactly which bond you are buying. The ISIN is the bond code, or “International Securities Identification Number” and you will find it on investinginbondseurope.eu, or investinginbonds.com if you are buying Treasury (US) bonds.

Indeed, there would be no point in calling a broker and asking to buy “a German ten-year bond”, as there are several bonds with that maturity, but with very different characteristics!

Then, you will tell the broker whether you want to buy or sell, and what quantity (the amount of money that you want to invest, if you are buying). The broker will do the quantity calculation for you and tell you how many bonds that represents.
You will then tell the broker whether you want to place a market or a limit order (more on this below), and if it is a limit order, what price you want to buy at. The broker will quote you an ask price and a bid price (you buy at the ask price and sell at the bid price).

The more liquid the bond, the quicker the trade will take place: the broker might ask you to hold the line a few minutes; if it is a market order (and the market is open of course), they will then confirm the trade, and the price at which the trade took place. For less liquid bonds, the broker might have to ask around and call several market makers for a quote: this might take a few hours.

You will then get an email confirming the trade, and you will have to allow for a few days for the trade to settle, that is, for the money to leave your account and the chosen security to get into your account. You can then monitor the price of the bonds you own on a daily basis, when you log on to your trading account.

**And when you want to sell your bonds?**

It is the exact same transaction, only you will tell the broker you want to sell, instead of buy, and you will quote, not the amount you want to sell, but the number of securities. Just like when buying, you will need to quote the ISIN, and you will have to decide whether to place a market or a limit order.

You might want to sell your “full holding” (all the bonds you own that are of a certain type), or only a certain number. Make sure you check in advance how many securities you own, and how many you want to sell: I find that people often know the price they bought at and know how much of a security they own (the total amount of money), but rarely do they know the actual number of securities that they hold. Why would they – this number doesn’t matter, but the other two do!

So check that and save yourself the awkward moment on the phone when the broker says “So how many do you want to sell?” and you say “Actually, I’m not sure, let me check”...

**What does a “market or limit order” mean?**

When placing a trade, you have to specify to the broker whether you want to buy or sell now at the market rate, or whether you want to buy or sell when the security reaches a specific price.

If you place a market order, the price will be the best price that the market maker can give the broker at that time: under European legislation, the broker must give you “best execution”.

To place a limit order on the other hand, you specify the price at which the broker should carry out the trade for you. Say the bond you have set your sights on has an ask price of 102. You place a limit order to buy at 99. This means the trade will only take place when and if that bond reaches an ask price of 99.
Depending on your instructions, the broker will hold that order for one day, or your limit order will be “GTC”: “good till cancelled”. In practice, a limit order is automatically cancelled after a certain time, usually 30 days; unless of course you cancel it yourself before it expires.

Placing a limit order involves two risks: first, if the security you want never reaches the price you want, you will have to cancel the limit order and go back and get the security at the market price, if you still want it. If you're buying and the ask price has risen in the meantime, or if you're selling and the bid price has fallen, that's too bad...

Secondly, if the price of the security changes, but doesn't pass through the exact price you specified, the trade won't take place. If the bond you wanted to buy at 99 goes from 102, to 100.9, directly to 98.9, your order will not be carried out because the bond price didn't pass through 99.

This is also valid of course when placing a limit order to sell.

**In a nutshell**

So, to recap, this is what a bond trade looks like:

- Call your broker
- Quote the ISIN of the bond you want
- Specify whether you are buying or selling
- Specify the quantity (amount of money when buying, number of bonds when selling)
- Specify whether this is a market or a limit order, and what your limit price is.

The costs vary from broker to broker. Because you're doing this over the phone it costs more than online trading, but generally charges represent around half to three quarters of a percent and may be subject to a minimum amount of a trade

Remember also that bonds are traded in round lots, that is, you cannot choose the number of bonds you want to buy, but may have to settle on a number of “bundles”. A round lot could represent for example €1000 or $1000 of face value. Let’s say that a bond is trading at half its face value (a bit of a stretch, but it might happen – Irish government bonds were nearly there in 2011), you would be spending €500 plus the costs on the trade when buying.

**And... And that is all?!**

Yes. Welcome to the “mysterious” world of financial markets. There isn't much of a mystery. With “just a couple” of differences, it is, after all, quite similar to walking into the corner shop and asking to buy a pound of oranges...