

Risk Through the Looking Glass

The pursuit of a return without the risk

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Abstract

The question of what is really risk in capital investments is posed and discussed. It suggests that the almost total acceptance of the concept that volatility constitutes a good measure of risk is wrong and leads towards a misallocation of economic resources. It is argued that the Expected Loss of a capital investment project should be used as a measure of risk. It is further illustrated how the risk aversion attitudes of potential investors can be taken into consideration in the decision to invest or not. The pursuit of return without risk inevitably leads to the transfer of wealth through a failing banking system which collaborates with an unregulated financial market who constantly seek low risk and relatively safe returns for the benefit of their wealthy clients. It is further argued that wasteful finance impairs the real economy and inevitably brings about financial crises and economic recessions. The promise of a "return without the risk" leads financial intermediaries in the direction of an elusive quest whereby the only way to attain this is through directing funding towards the capture of existing assets rather than investing in the real economy to create new wealth.

Keywords: Economic development, risk analysis, project evaluation, corporate lending, credit risk.

JEL Classification: D61, G17, G21, G32, G33, H43

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An alternate world of risk and return

The term “through the looking-glass” is borrowed from Lewis Carroll’s (1872) book where Alice’s pet cat begins to wonder what the world is like on the other side of a mirror with the reflected scene displayed on its surface. To her surprise, she is able to pass through the glass to experience the *alternate world* on the other side. This describes rather well the *alternate world of risk and return* following the so-called liberalisation of financial markets which carried the world through such a mirror.

The myth of the risk-free return is because of a widespread fallacy of what constitutes an *investment* and what is really *risk*. An investment can only be referring to capital that is funding a project in the real economy and which creates wealth and hence earns a return to equity. There is no return without a risk therefore in a productive (wealth adding) venture. There is always some risk that a capital investment project or a business undertaking will fail to attain a desired or required return. This is a fact of life but it is also what drives the real economy.

Risk and return are like two sides of a coin. There is no way in a free and openly competitive economy that one can detach risk from the return. It is of course possible sometimes to reduce risk by better formulating a business venture as it is also probable, in some cases, for certain stakeholders in a project to enjoy the return while passing on the risk to other parties. But ***risk cannot be eliminated completely*** from a capital investment in the real economy. The only way to eliminate risk is found not in wealth creation projects but rather in wealth extraction deals that invariably involve the transfer of existing assets.

The fable and promise of a return without the risk emanates from the wrong use of the word *investment* which is used inadvertently and loosely by many to describe funding of mostly non-productive uses. Such as it is, for example, the issue and sale of bonds on asset backed rents in the Finance, Real Estate and Insurance sector (better known as FIRE). Hedge funds and investment banks serve such promise to their clients when they create special bond funds that they then use to purchase asset-backed securities that extract rents from existing assets.

Funding the acquisition of existing rentier assets however is not a capital investment. It does not create or add anything to the real economy. It simply transfers the assets and rights emanating from such acquisition from one party to another. There is a profit or loss emanating to both sides as with all else. But it does not constitute a real capital investment. It is merely the use of funding to earn some income, usually through rents, to the participants of such schemes or funds while not putting their wealth at risk. Such earnings do not come from a new business venture. The so called “investment” in essence is simply the funding by which an existing asset is acquired. The economy does not get wealthier because existing wealth changes hands. It simply means that the profits (or losses) are now accruing to different beneficiaries.

The term risk-free is rather loosely used in financial markets and in essence refers only to what assets can be acquired and the fund can have earnings from with limited risk. It is not a capital investment in the real economy which, by comparison, creates new wealth. It is rather in reference to what one can earn through some sort of asset-backed rentier income. But even that is rarely entirely risk-free as there is no guarantee that one would not default or that inflation may not take away any real earnings from such owning such assets.

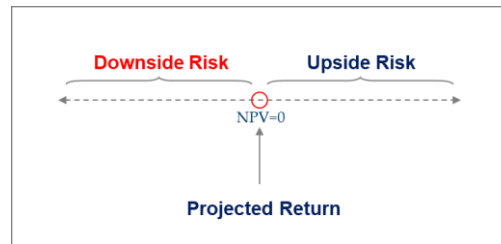
Moreover, the pursuit of a “return without the risk” is causing the banking system to lose its direction and Governments to become complicit to a systemic conspiracy against the welfare

of the people whose interests their elected representatives in a democracy are supposed to be protecting and serving. And it is based on an erroneous concept of *what risk really is*.

What is really risk

In investment and finance theory, “Risk” refers to the **volatility** of expected return. In the context of capital investment appraisal **risk** may be defined as *the possible negative outcomes times the probability of occurrence* with respect of the projected return (Net Present Value). Or what is termed as the **Expected Loss** of a probability distribution after applying risk analysis to a model using Monte Carlo simulation methodology.

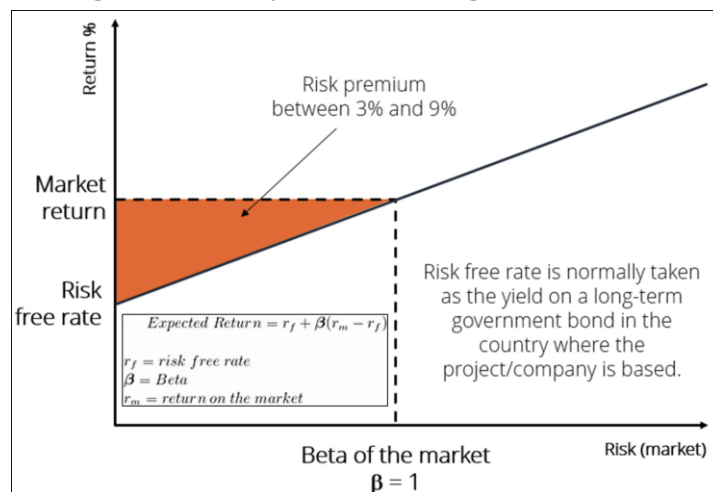
Figure 1 – Upside Volatility is not Risk



In investment and finance theory, the term and concept of risk refers strictly to the volatility of expected return. To a large extent this has been established by what is known as the Capital Asset Pricing Model, proposed by a number of Nobel winning economists including Sharpe (1964), Markowitz (1999) and others.

The Capital Asset Pricing Model (CAPM) is a model that describes the relationship between the expected return and the risk of investing in stocks and securities. It argues that the expected return on a security is equal to the risk-free return plus a risk premium, which is based on the beta of that security. Risk and return from the vantage point of the floor of a Stock exchange which is in the main speculative is also based on a concept whereby risk is perceived as volatility of return. This however is not strictly speaking correct. Upside volatility is not really risk. Higher than expected returns are not risk. Moreover, there is no return without risk in the real economy. Even the risk-free return that the CAPM model is based on is not really without risk. And in most cases where this is sought it is not even an investment as it creates nothing.

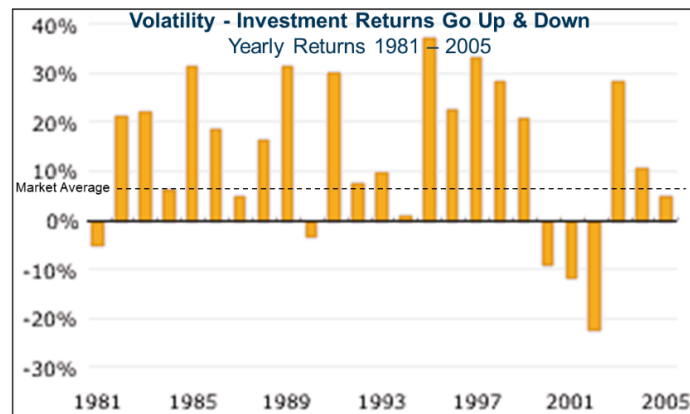
Figure 2 - The Capital Asset Pricing Model (CAPM)



<https://corporatefinanceinstitute.com/resources/knowledge/finance/what-is-capm-formula/>

Volatility is already factored into the discount rate used to calculate the Net Present Value. The higher the Volatility the higher the Expected Return. Not all volatility however is really risk. Volatility has a good side. People like it when it makes their returns go up. Hence to consider that any volatility (positive or negative) implies more risk is to say the least contrary to any logic. The Capital Asset Pricing Model methodology seems to have conveniently convinced most in the financial industry, including the academia, as it is basically argued the Market return is the optimum one can attain. Accepting this as a premise it follows that through a diversified portfolio of assets one can attain the reduction of risk as the overall return of such portfolio gradually optimises around something close to the market return.

Figure 3 - Upside volatility is not Risk¹



As illustrated in Figure 3 however not all volatility is risk. At least, not any volatility. In conventional thinking of what risk is the above returns may constitute a high-risk investment. This is contrary to any common-sense understanding of what constitutes risk. As it is illustrated in the example, where practically all outcomes are positive variations above the expected return.

Risk defined as expected loss

Moving on from using volatility of return to Expected Loss in probabilistic analysis (using Monte Carlo Simulation methodology) one can attach probabilities to all possible outcomes. It is therefore possible to distinguish between downside and upside risk. Whereby the upside are all the probability weighted outcomes above 0 NPV (the Expected Gain) and the downside where all the probability weighted negative NPV outcomes (the Expected Loss) constitutes really what depicts and summarises a project real risk.

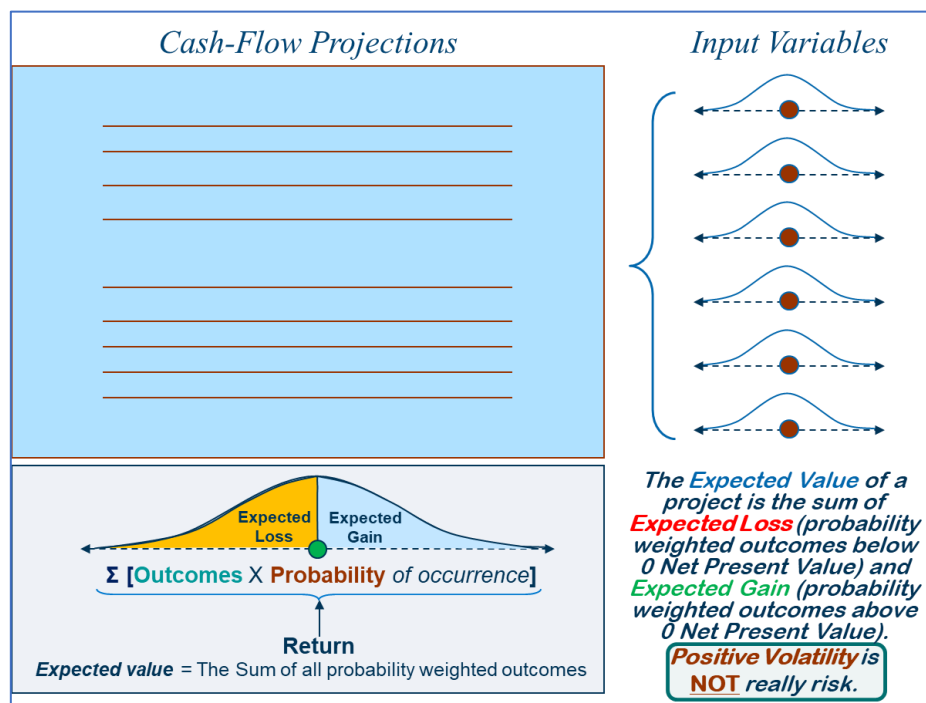
As it illustrated in Figure 4, in a Monte Carlo Simulation methodology risk analysis one defines probability distributions on the key risk variables in a financial model which is used to appraise a capital investment project. The simulation generates probability distributions of the outcomes (in our example the Net Present Value) given the expected range and probabilities defined for these risk variables. As a result, one can now have an idea of the spread of return possible including its likelihood of occurrence. On further analysis it is possible to estimate Expected Gain (positive) and Expected Loss (negative). The sum of the

¹ *Source: S&P's Micropal. Graph shows annual returns for S&P 500 Index and assumes reinvestment of all dividends. Taken from Franklin Templeton Investments website on "Investment Risk".*

two always equals the Expected Value of the whole probability distribution of the outcome. Which can be defined as:

$$EV = \sum [\text{Outcomes} \times \text{Probability}]$$

Figure 4 - Uncertainty of input variables drive volatility of return

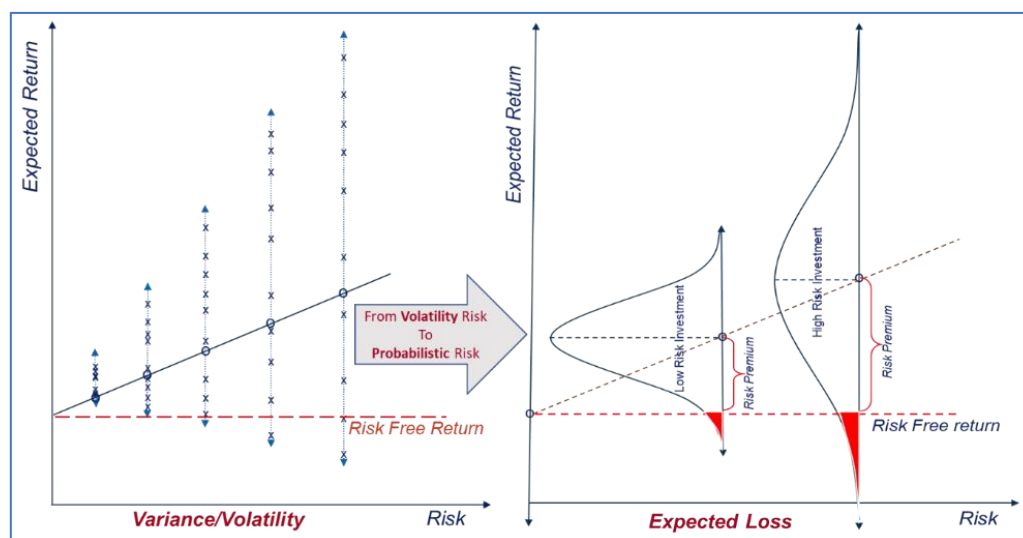


Expected Return is therefore the sum of all probability weighted outcomes of a Monte Carlo Simulation². With this available one can then distinguish and estimate risk where it really belongs. Only the negative outcomes in the case of Net Present Value or outcomes that fall below the expected return when another measure (such as the Internal Rate of Return) is used.

We are therefore able to progress from the overall variance/volatility assessment of risk to the Probabilistic assessment of risk through the estimation of Expected Loss, as illustrated in Figure 5. The diagram also illustrates an important attribute of investing in the real economy rather than following a hedged or low risk approach. The investment in the real economy in a project that creates new wealth is almost always a potentially higher risk investment. While it is possible to attain much higher returns in general it is also more likely that in some instances one may also lose more if the project fails. But in general, the average expected return on a real project vis-à-vis a limited or low risk positioning on asset-backed returns is higher. Of course, this means that the risk premium on the real economy project is also higher. But implicit in this analysis is also that investing in low risk (hedged risk) projects in effect lowers the potential performance of the economy in total.

² All Monte Carlo simulation and the analysis that follows, including the Risk Aversion Analysis referred to here, was done using RiskEase® by RiskEase Ltd at www.riskease.com. RiskEase was the application created by Savvakis Savvides (initially as RiskMaster and subsequently renamed to RiskEase) that was the companion software add-in to the very successful paper by the author of Risk Analysis in Investment Appraisal (Savvides 1994).

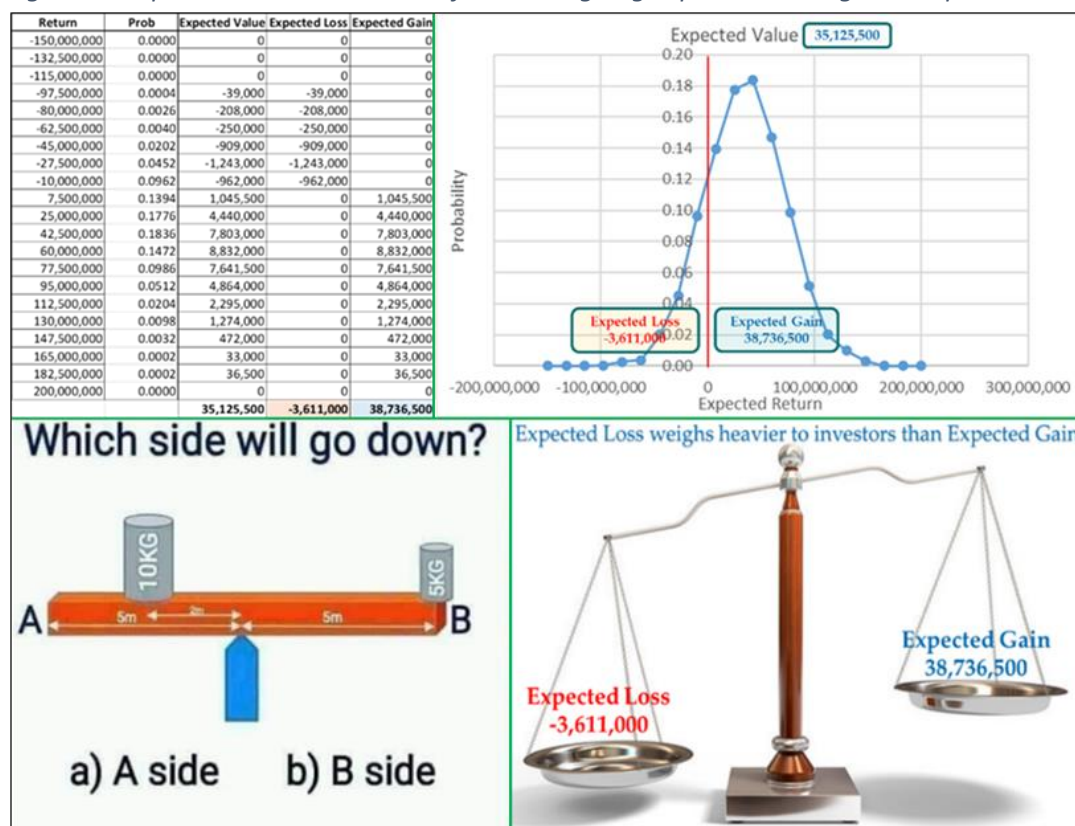
Figure 5 - Expected Loss as measure of Risk



Risk aversion and the investment decision

In effect, the current money-managing investors weigh up the risk of losing money and increasing in weight as they become higher in the scale against the potential higher returns of a proposed capital investment. As an example, consider the project below which shows a positive Net Present Value of about €35 million. Given a risk neutral preference this project should be accepted (Figure 6).

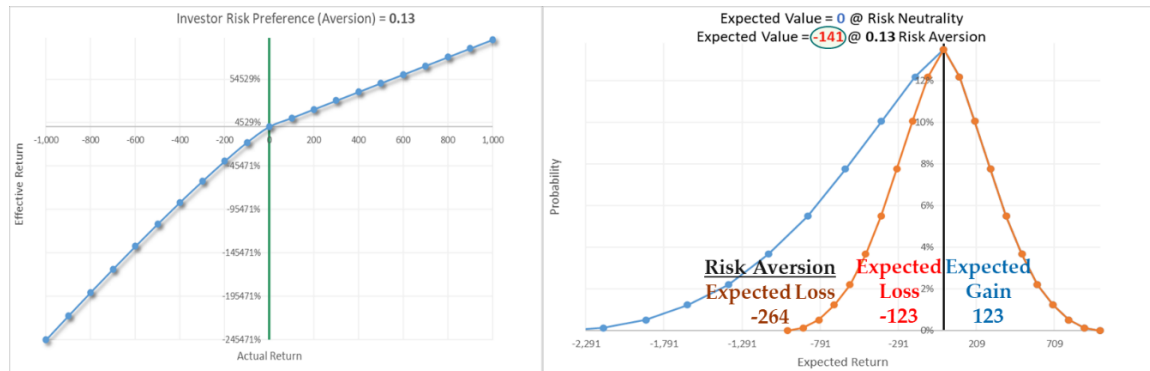
Figure 6 - Expected Loss as measure of risk - Weighing Expected Loss against Expected Gain



However, if one applies the risk aversion bias of potential investors it is quite probable that it may be rejected. As the negative flows weigh heavier on the scale of risk aversion.

If one applies the risk aversion preferences of an investor (shown as an extended bend downwards on the Investor Risk Preference chart in figure 7 – left side box) then the Expected Loss as adjusted to take account of the investor’s risk profile may turn a risk neutral decision from positive to a negative one (figure 7 - right side box).

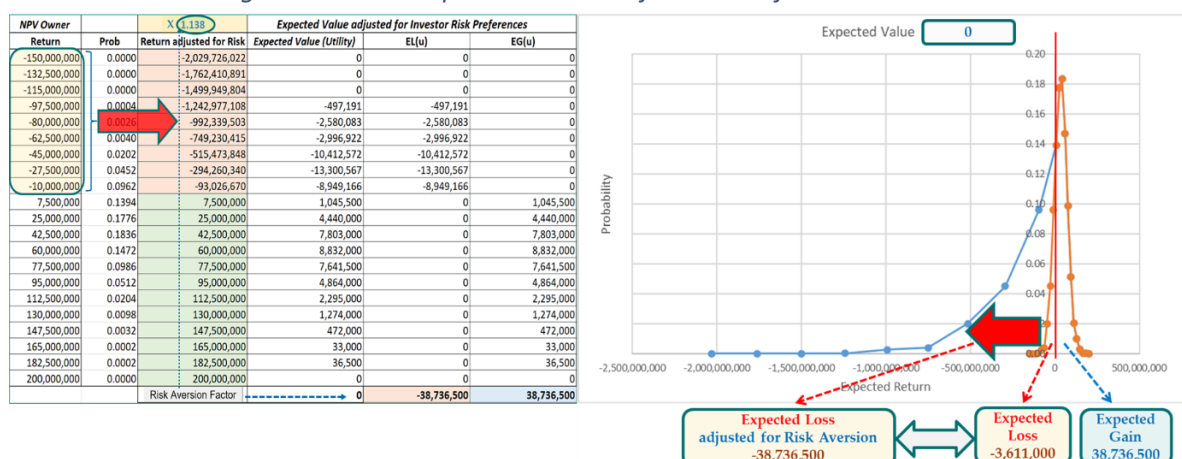
Figure 7 - Expected Loss adjusted for Risk Aversion



When the risk aversion preferences of investors are factored into the analysis a positive Net Present Value project may be rejected. As it is illustrated in the example in Figure 8 where the negative returns are adjusted to reflect the risk aversion preferences of a particular investor. In the example, the negative cashflows are multiplied by a “Risk Adjustment Factor” (RAF) to reflect the investor’s risk aversion preferences. The positive cashflows remain unaffected. The probabilities also do not change as what is likely to happen is not affected by risk attitudes. The RAF is simply a linear adjustment of how negative cash flows may weigh on an investor’s decision scale for a given project.

Risk aversion analysis can be applied to any probability distribution generated from a set of Monte Carlo Simulation results. Risk Aversion Analysis also allows one to use the Solver in Excel to optimise so as to find the exact RAF that adjusts the negative cash flows so that the Expected Value is equal a given Expected Return level³. As illustrated in Figure 8, in the case of Net Present Value the adjustment is the one that makes the Expected Value to be equal to 0 (RAF=1.138). The RAF is also an objective indicator of the capacity of a given investment to withstand risk aversion investor biases.

Figure 8 - When Expected Loss is adjusted to reflect risk aversion



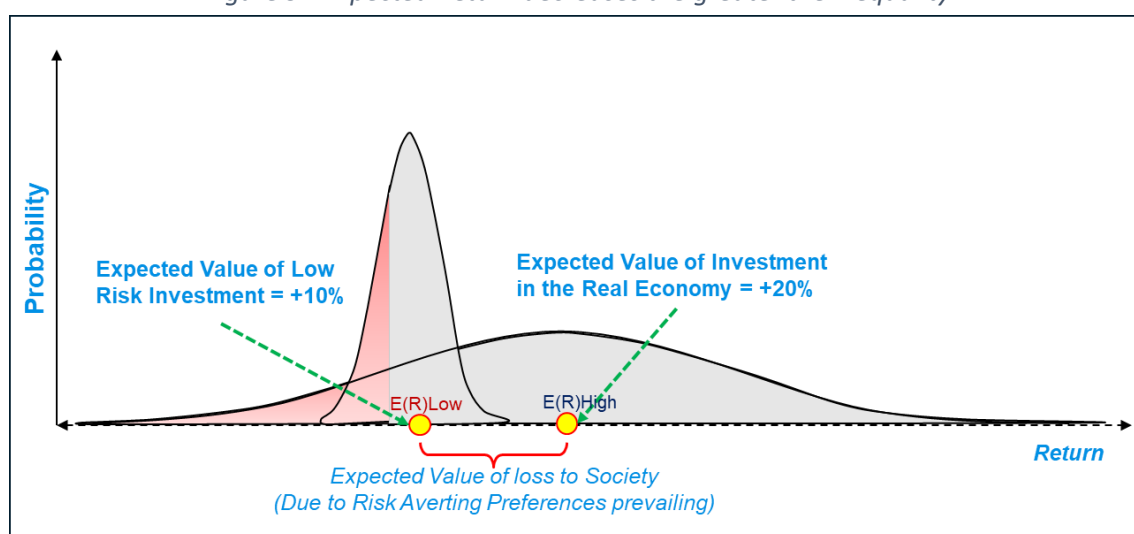
³ The example has been done using the Risk Aversion Analysis module of RiskEase® software, www.riskease.com.

Risk aversion has a very significant impact on the real economy and in consequence to the general welfare of the people. As more and more capital investment projects in the real economy do not constitute the ideal investment for the risk averse preferences of wealthy investors (including hedge funds, investment banks, wealth management arms of banks and so on). The overall impact of this extreme inequality is that through the elusive promise of a return without the risk offered by financial market “experts” (and as supported by the prevailing academic thinking), the bulk of funding is directed towards rentier rather than productive uses. This causes a systemic disconnect of financing away from wealth creation and towards wealth extraction. As a consequence, the real productive economy suffers and in effect slowly but surely the world becomes poorer.

Extreme inequality of income and wealth also increases risk aversion. This is to some extent to be expected since the natural concern of the very wealthy is to maintain what they have rather than to risk losing it in the real projects in the real productive economy. What they seek and look for therefore is to have a decent but safe return on the enormous wealth they have amassed. In the case of Pension or Insurance funds, because of the nature of their mandate, they cannot undertake but limited amounts of risk on the money they manage. The concentration of money in the hands of the very few therefore skews investor attitudes towards risk aversion. Moreover, there is a further reason for shying away from a real economy investment as they do not possess the skills, competence and understanding of such projects. It comes as no surprise therefore that in most cases they are unwilling to take on the risks inherent in the productive economy. By contrast, while entrepreneurs who master their trade see a new venture as a challenge, the very wealthy and huge money funds see such investments as potential black holes which can take them and their clients into an abyss.

The end result of extreme inequality and the risk aversion preferences of the wealthy and special interest groups prevailing is that funding is directed away from economically productive investments and into low-risk investments (often bonds and asset-backed securities) that hedge the risk. With the reduction of volatility through such low-risk investments however also comes a lower expected return than the average expected return in projects in the real economy. Hence, the real economy underperforms and general welfare overall suffers a loss (as illustrated in the Figure 9).

Figure 9 - Expected Return decreases the greater the inequality

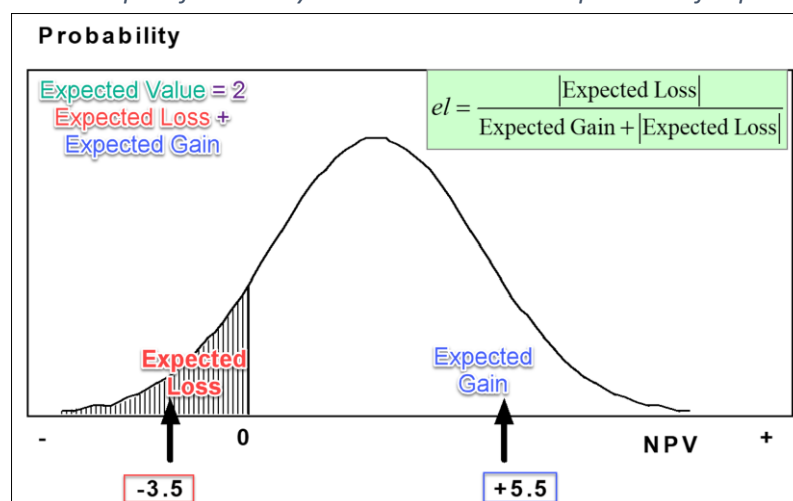


A banking system that facilitates wealth transfer

Every capital investment whether deemed to have negative or positive net present value has, like a coin, two sides. One is the return side and the other the risk side. Any attempt to detach one from the other almost always results in misallocation of economic resources where some benefit at the expense of those who are undertaking the risk. This is magnified by a world economy where there is huge concentration of wealth and which is facilitated by a loose financial system that enables banks to create money and pass on the risk to their borrowers (Savvides 2020). This allows banks to pass on their loan assets to hedge funds and wealth managers with borrowers ending up at the mercy of those who are looking to position mountains of money in assets with moderate return but with relatively low risk. Such risk/return profiles however can only be basically found in the transfer of existing assets rather than in the creation of new wealth through new viable capital investment projects. In this manner, and with the banking system conveniently acting as a facilitator, a huge transfer of wealth from the many to the few takes place which in turn exacerbates the concentration of wealth and the inequality problem⁴.

The paradox of detaching the risk from return can be demonstrated in the expected value calculation which is the probability distribution of the expected outcome of a capital investment (Savvides 1994). This in turn has two aspects or sides which together make up the expected return. One is the *expected loss* which is composed of the likely instances where there the expected return is below the required (such as 0 NPV) times the probability of occurrence for each instance and on the other side the *expected gain* which is made up of all the likely instances where it is expected to have a return above the required level (positive NPV) times the probability of occurrence of each instance. The expected loss ratio is the expected value of loss (or *Expected Loss*) in absolute terms divided by the sum of the expected value of gain (or *Expected Gain*) and the expected loss in absolute terms, as illustrated in Figure 10 (where the Expected Value of the project +2 is the sum of the Expected Loss and Expected Gain):

Figure 10 - Example of risk analysis results and the components of Expected Value



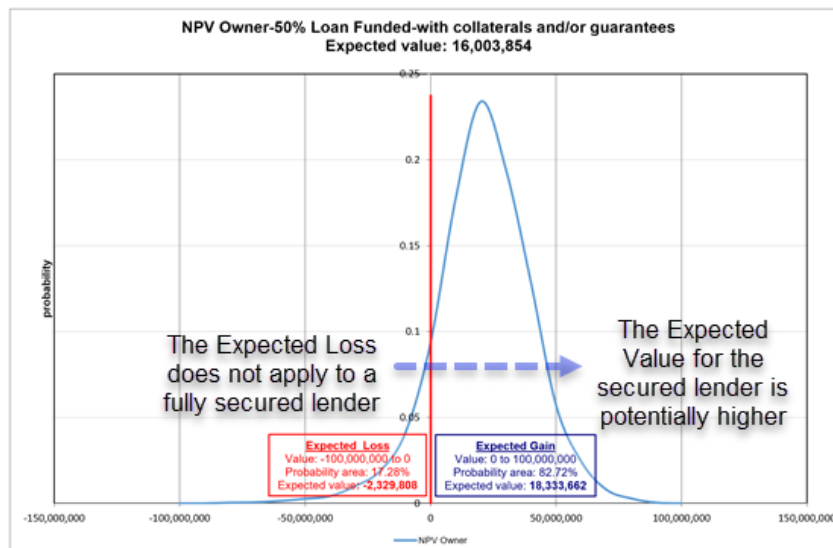
⁴ In addition, banks enjoy an indirect subsidy by legislation that allows interest on borrowings to be tax exempt (the tax shield). Banks have also been granted the right to create money out of thin air instead of that being the prerogative of the Sovereign. And in a huge paradox, sovereign governments now borrow at interest from the banks what they could have created themselves and even guarantee deposits and save the banks as and when is needed.

When an entrepreneur is funding a project out of own equity, he has to decide whether he believes he can manage these risks and undertake the investment against the prospect to make a good expected return. This is how a normal laissez-faire economy works.

Now consider the situation, which is common today, whereby half, if not most of the capital investment, is funded through loans. If we assume that 50% of a project is loan financed how does the above change the risk-return situation? As far as the risk to the owner of the project is concerned, although the investors provide only 50% of the funding required, they undertake the whole of the risk by providing full recourse to the banks for the lending in terms of collaterals and guarantees. In other words, the lenders in effect undertake no real risk. And for that, the bank takes a reduced but relatively certain return in terms of the interest agreed and other bank charges. From there on, there are two possible outcomes for a lender. To collect its principal and interest or for the loan to become non-performing and thus to call it in and collect on the collateral and guarantees at hand.

The intriguing, but also rather worrying question, is what is more likely to happen, or may even be preferred by banks, in such cases where a loan becomes non-performing and it needs to be recovered? Strange as it may seem, more often than not, it is more likely that banks opt to sell a loan to funds or other wealth managers rather than executing whatever recourse they have at hand. This process however facilitates wealth extraction and wealth transfer from the distressed borrowers to the Funds or other third parties that are buying these (including substantial proceeds for intermediaries – such as investment banks and other advisors). Paradoxically, this systemic method seems to be serving those who control the banks and primarily its executives and major shareholders better than if the bank was to be granting only viable loans with a good repayment capability that do not become non-performing.

Figure 11 - Calculation of Expected Value using Monte Carlo Simulation



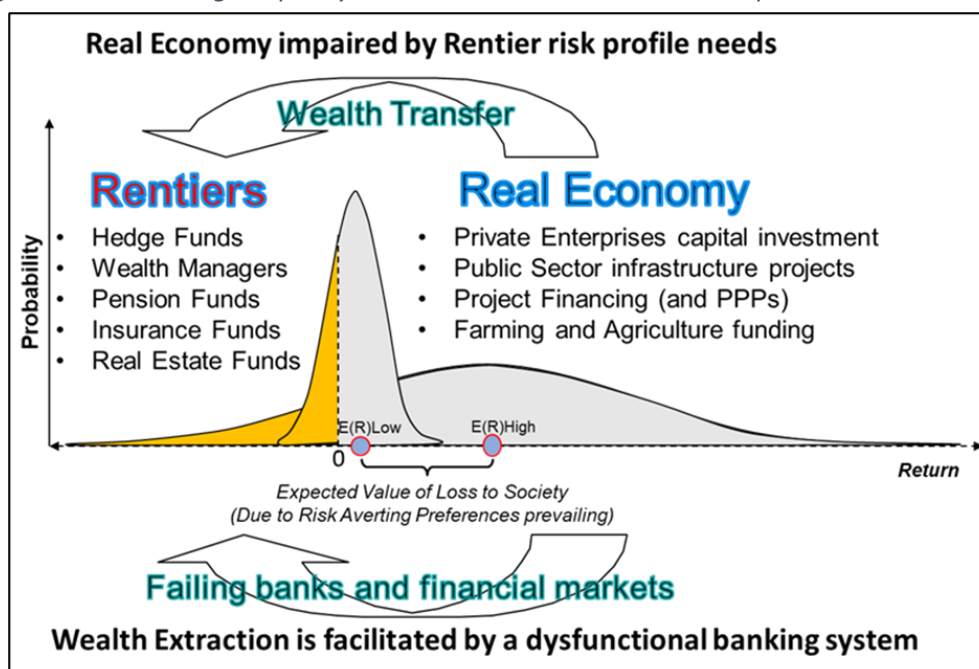
When one is fully covered as in the case of a bank, illustrated in the example in Figure 11, the expected loss part of an investment does not apply. In effect, this means that the expected value of an acquired project asset as it applies to the lender is in fact higher because of full recourse in the event of any losses. So, as in the simple example above, the expected value of the probability distribution for all intends and purposes is +5.5 for the perspective of the lender who can call on the securities and take over the assets of the borrower. But the paradox is that if a bank utilises these securities directly, the maximum compensation that can be attained is the principal of the loan plus any accrued interest. However, if a bank is allowed

(or even encouraged by the system as it is the rule now) to sell the loan asset to a third party with all the collaterals and guarantees in place, it would be possible for all parties involved in such deals to extract more than just if the bank was to call in on the loan and manage the recovery process itself in the depth of time. The bank would still not show in its books any abnormal profits but in such deals the boundaries for many in its immediate and peripheral environment to gain from such deals are enormous and not always apparent or even transparent.

In today's environment banks seem to be making more money by granting loans that become non-performing rather than economically viable ones that support the productive economy. Black (2005) argues very convincingly that banks often seek and even encourage giving subprime (or liar's) loans. This is spurred by a massive and ever-growing demand for buying relatively risk-free assets albeit with some moderate but rather certain return, which happens to be the conservative risk/return profile sought by those who have amassed huge amounts of money and wealth.

Banking has evolved to perform this unsavoury role. Bankers seem to have totally lost focus of what always was, and still should be, their primary mission; that of productive lending that funds and fosters economic growth. With the so-called financial liberalisation, there emerged faster and easier ways for those in control of banks to respond and facilitate the needs of the huge concentration of money in the world. But in order to tap such opportunities for quick and handsome profits a bank has to grant far many more loans than the usual number of economically viable loans. There is no easy way to get to such vast portfolio of loans even if one was to apply proper assessment and good banking practices which, in the experience of the author, is as far from what happens in reality nowadays as it ever was. Many of these loans end up as non-performing therefore which conveniently also enables the transfer of wealth to funds.

Figure 12 - Increasing inequality leads to wealth extraction and impairs the real economy



As it is demonstrated in Figure 12, it is the increasing inequality due to the concentration of money and power in the world and the deregulation through a loose financial and banking system that has brought the world at the brink of stagnation and a prolonged economic

depression. Complicit in this *disconnect of funding from wealth creation* are many, including the regulatory authorities for banks, academia, rating agencies and last, but not least, politicians, Savvides (2021).

Risk and return driving economic development

Risk and return are the twin cylinders of the engine driving a free market economy. In the real economy, there is no such thing as a return without risk. Risk is simply the uncertainty that encompasses an entrepreneurial capital investment project as its future cash flows cannot be determined with certainty. Economic development is attained by taking on risks that are part and parcel of productive capital investments. Where the priority is to contain or even eliminate investment risk while attaining a good return, inevitably the end result is not wealth creation but wealth extraction. This is because only in situations of forced wealth transfers can one hope to find such conditions of a return without the risk. These forced acquisitions of other people's assets serve only the "rentiers" rather than the productive sectors of the economy and inevitably result in increased inequality in the world. It is taxpayers that ultimately bear the cost of such forced acquisitions and transfers of wealth.

The original meaning of a free market, as discussed by classical political economists, was a market free from all forms of rent. By contrast, current economic thinking seems to be in the service of rentiers and financiers. It also almost completely neglects to consider the role of money and debt. Economic policy is therefore formed using flawed economic models and leads to erroneous policies by governments and regulatory authorities around the world. This was a lesson learned in the Great Depression in the United States and led to the *Glass Steagall Act of 1933*, which separated commercial banking from investment banking. However, lobbying and pressure applied by special interests in Wall Street on the Clinton government led to the repeal of Glass Steagall and the introduction of the *Financial Services Modernization Act of 1999*. This let the genie out of the bottle and it is now probably impossible to put it back in.

Economics is about using economic resources to maximise the utility (or welfare) of a society. In order to move an economy closer toward this goal it is necessary to employ capital and labour and other factors of production, such as land, as near as possible to their best and most efficient uses. However, the efficient employment of labour and other factors of production and the raising of the pace of economic development depends crucially on the productive employment of capital in funding economically viable projects in the real economy. This in effect means that a capital investment project, when appraised for the economy through cost-benefit analysis, should have a positive net present value (where the net cash flows of the project discounted at the opportunity cost of capital is higher than zero). It also follows that a viable investment should also be considered capable to service its debt.

Moreover, as with any new project the outcome is, by definition, uncertain it is also desirable to evaluate the impact of alternative possible scenarios in light of the risks that are intrinsic to the project and consider whether the competence and capacity to overcome these is at hand. In other words, any new investment project should have a manageable risk profile and a decision on whether to undertake and provide the financing for it should depend on the outcome of such risk analysis.

Sustainable economic development therefore can only be attained if capital investment and financing is channelled towards funding the most viable and therefore also competitive projects. Real economic development comes from building on solid grounds and from funding projects which add net customer value and are cost effective. This holds true for both foreign and local investment projects. Only viable projects serve the cause of economic

development. An investment which is likely to foreclose before its expected life span or which is likely to be unable to repay its loans only drags the economy even further into recession. This is a lesson the world should have learned by now as the vast majority of the loans that have been granted by banks in countries such as Cyprus, Ireland, Portugal, Italy and Spain in the past 20-30 years have become non-performing.

Current economic thinking does not distinguish between newly created and existing wealth. The reason is mainly because the Gross Domestic Product (GDP) of a nation is considered to be the total value added in a calendar year. In *The Wealth of Nations* Adam Smith described wealth as "the annual produce of the land and labour of the society". The emphasis on the word "produce" is the key to what wealth creation really is. It is about the creation of new wealth through productively combining the factors of production. Money has no intrinsic value and does not automatically create wealth. This only happens when money is used productively to fund new products and services which add real economic value (utility/consumer surplus) and thereby enhance economic and social welfare.

The world has however moved away from this fundamental premise of Economics. Even economists who were defending the existence of rentiers at the end of the 19th century could only do so on the premise that banks finance productivity. The writings of Adam Smith, Stuart Mill and Alfred Marshall led to the idea that economic resources should be directed towards industry instead of supporting landlords and the parasitic financial classes. The classical economists were arguing that rentiers were getting a free lunch, by extracting rather than creating wealth. Rentiers and neoclassical economists fought back by denying that economic rent was unearned. For example, John Bates Clarke argued that this income is a payment for the landlords' labour and enterprise and not, as J. S. Mill had characterised it, accruing "in their sleep.". Interest was depicted as a payment for the "service" of lending productively, not as exploitation⁵. Defining and justifying interest as the "*earned payment for the service of lending productively*" was the moral justification for viewing banks as performing a vital economic role and in serving society. The departure from this fundamental premise is possibly the root cause of economic crises and the main reason why real economies are frequently in distress.

The gist of the debate about rentiers at the end of 19th and beginning of the 20th century, as it relates to banks, was whether banks provide a social service rather than extract rents. If banks lend only with respect of their own security (guarantees and collaterals available) considerations rather than by prudently assessing the project's (or a business') ability to repay, then debt can become wasteful and extractive. Such lending, if done in excess, leads to financial bubbles and cause economic crises.

The deregulation of financial markets and the widely accepted misconception that structured assets and derivatives add to economic development have taken Economics "through the looking-glass" and into an alternate world where the real economy has become weaker more unstable. The consequence of this is that money's vital role as a medium of exchange for goods and services has shifted towards one where it is now perceived as having its own intrinsic value causing an unprecedented concentration of money in the hands of the few.

⁵ Hudson (2018)

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