The central assumptions of the efficient market hypothesis ("EMH") are the perfect market assumptions. In a perfect market there are no transactions costs, information is costless, investors have homogenous expectations, investors are rational and therefore markets are efficient. An efficient market is one in which prices of securities fully reflect available information.

In the real world, the perfect market assumptions underlying the EMH do not hold and the market is not fully efficient. However, there is evidence that even in the imperfect world in which we live, markets are efficient to a certain extent as prices do adjust in response to new information. Although, whether real world markets adjust to reflect fundamental values is less certain. Following the recent global financial crisis and systemic failure of the banking system, it is clear that the failure of many of the perfect market assumptions and the presence of irrational investors, transaction costs, information asymmetries and heterogeneous expectations has lead to mispricing, price bubbles and the general undermining of the EMH.

It is questionable whether or not transactional lawyers, as distinct from litigation lawyers, add value to commercial transactions by actually creating deal value. Skeptics would consider lawyers to be a necessary transaction cost at best and deal killing parasites at worst. Scholars have attempted to demonstrate ways in which lawyers can actually increase deal value in the real world precisely because the perfect market assumptions of the EMH do not hold.

This essay agrees with the proposition that in a world where the central assumptions of the EMH hold true, being the perfect market assumptions, there would be few, if any, opportunities for transactional lawyers to generate value. Fortunately for transactional lawyers, we live in a world where the perfect market assumptions do not hold, transaction costs are pervasive, information asymmetries are present and investors have heterogeneous expectations. The failure of these perfect market assumptions paves the way for transactional lawyers to create value by reducing transactions costs, acting as reputational intermediaries and by reducing regulatory costs.

In order to discuss the central thesis of this paper, 'that in a world where the central assumptions of the EMH hold true, one would expect to observe few, if any, opportunities for the transactional lawyer to generate value', this essay will examine the following questions:

(a) what is the EMH and what are the central assumptions of the EMH?
(b) do the central assumptions of the EMH hold true? Does the EMH hold true?
(c) what do business lawyers do?
(d) does what business lawyers do add value because they act as 'transaction cost engineers', 'reputational intermediaries' or 'regulatory cost engineers'?
(e) if business lawyers do generate value in the real world, would there by any opportunities for this value creation if the central assumptions of the EMH held true?

What is the EMH and what are the central assumptions of the EMH?

Three familiar economic theories arose between the 1950s and the early 1970s: the Capital Asset Pricing Model[1], the Miller-Modigliani Irrelevance Propositions[2], and the EMH. According to Gilson and Kraakman, the three theories share a common methodology and are based on an extensive set of perfect markets assumptions which Gilson and Kraakman have distilled to the following key assumptions: rational investors, perfect information and no transaction costs.[3]

The fundamental role of the capital markets is to efficiently allocate capital. In an ideal market, prices will reflect fundamental values such that resources are allocated

[1] W Sharpe, 'Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk' (1964) 19 Journal of Finance 425.
[2] F Modigliani and MH Miller, 'The Cost of Capital, Corporation Finance, and the Theory of Investment' (1958) 48 American Economic Review 655.
[3] RJ Gilson and RH Kraakman, 'The Mechanisms of Market Efficiency Twenty Years On: The Hindsight Bias' (2003) 5 (Harvard Law School John M. Olin Center for Law, Economics and Business Discussion Paper Series. Paper 446) http://lsr.nellco.org/harvard_olin/446 accessed 19 April 2011.

to those willing to pay a certain price to obtain a stock of a certain value. It follows that a market will be efficient if prices fully reflect available information.[4]

The EMH was developed as a theory to explain why changes in security prices appear to be random; meaning that it is not possible to predict future changes in security prices based on historical price movements.[5] The EMH attempts to explain this 'random walk model' by purporting that the price of a particular security changes in response to information about that security.[6] This central thesis of the EMH is intuitive and as William Sharpe commented, 'simply put, the thesis is this: that in a well-functioning securities market, the prices ... of securities will reflect predictions based on all relevant and available information. This seems to be trivially self-evident to most professional economists – so much so, that testing seems almost silly'.[7]

Studies supporting the randomness of security prices emerged before the theory of the EMH itself beginning with Bachelier in 1900.[8] In the theoretical perfect market, one would predict that the prices of securities should adjust instantaneously and accurately to new information.[9] The assumptions of the perfect market may be characterised as follows: there are a large number of participants such that the actions of any individual participant cannot materially affect the market; participants are fully informed, have equal access to the markets, and act rationally; the commodity is homogeneous; and there are no transaction costs.[10] In a broad sense the EMH predicts that in a perfect market the prices of securities traded in capital markets fully reflect all information concerning those securities.[11]

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[4] EF Fama, 'Efficient Capital Markets: A Review of Theory and Empirical Work' (1970) 25 The Journal of Finance 383.
[5] LA Cunningham, 'From Random Walks to Chaotic Crashes: The Linear Genealogy of the Efficient Capital Market Hypothesis' (1994) 62 The George Washington Law Review 546, 551.
[6] ibid 551.
[7] *Gilson* (n 3) 6.
[8] *Cunningham* (n 5) 558.
[9] ibid 559.
[10] ibid.
[11] ibid.

The EMH goes beyond the random walk model which held that successive price changes in securities are random and therefore not predictable.[12] As a result, the EMH has been divided into three forms of efficiency: the weak form; the semi-strong form; and the strong-form. The weak form holds that current security prices fully reflect all information consisting of historical security prices; the semi-strong form holds that current security prices fully reflect all information that is currently publically available; and the strong form holds that current security prices reflect all currently existing information, whether publicly available or not.[13]

Do the central assumptions of the EMH hold true? Does the EMH hold true?

It goes without saying that the perfect market assumptions, being the central assumptions of the EMH, do not hold true in the real world. What is interesting for EMH is that the hypothesis itself appears to hold true, at least to some extent, despite the failure in the real world of its underlying assumptions. For the purposes of the discussion of the EMH in the context of this essay, it is interesting to briefly consider the empirical support for and against the validity of the EMH itself, although this is a digression from discussing the central question of this essay, being the ability or otherwise of transactional lawyers to add value if the perfect market assumptions were to hold true.

Empirical Support for and against the EMH

The strong form of efficiency is generally accepted to be invalid and the insider trading scandals of the 1980s provide much of the evidence to support its invalidity.[14]

[12] ibid.
[13] ibid 560.
[14] ibid 562.

The intuition being that if market prices do not reflect all information about a particular security then those with inside information will be able to achieve abnormal market returns by trading on that information, at least in the short term.[15] According to Eugene Fama, the strong form of efficiency is most useful when viewed as a benchmark against which to measure deviations from market efficiency.[16]

As the strong form of the EMH is generally disregarded, debate about the validity of the EMH is focused on the semi-strong and weak forms. Scholarship relating to the weak form is often confined to an analysis of the random walk model itself.

Tests of the weak form of efficiency are the most prolific and the empirical evidence generally supports the hypothesis.[17] There is some evidence of a lack of independence or correlation in successive price changes but according to Fama this is consistent with the expected return or 'fair game' efficient markets models and is not sufficient to show that markets are inefficient.[18] Eugene Fama concludes that there is not much evidence against even the random walk model for price changes or returns covering a day or longer.[19]

Tests of the semi-strong form of efficiency, which hypothesizes that prices fully reflect all publicly available information, provide the most support for the EMH. Event studies have shown that stock prices respond quickly to announcements relating to management of a public company, health of senior management, rumours of a takeover of the company and the like.

Cunningham has more recently stated that the weak and semi-strong forms of the EMH are based on linear methodology and thought which has been superseded by nonlinear techniques.[20] Cunningham argues that since the methodology upon which

[15] ibid.
[16] *Fama* (n 4) 415.
[17] ibid 414.
[18] ibid.
[19] ibid.
[20] *Cunningham* (n 5) 548.

the original empirical support for the EMH is now obsolete, the EMH is false in all its forms.

This leads us to the question of whether prices actually fully reflect available information in the sense that they adjust to fundamental values rather than values arbitrarily reached because the information has not been fully digested or been misinterpreted by the market.

Even if we accept there is evidence that prices adjust to reflect new information, for example a target company's share price jumps up upon the announcement of a takeover, how confident can we be that this change in price provides evidence that the market is efficient and that this jump in share price is justified? Longer-term event studies have shown that investors fail to quickly and accurately assess the full impact of corporate announcements.[21] This is where behavioural finance has emerged as a powerful force in the area of financial economics.

EMH and Behavioural Finance

According to the EMH, the existence of irrational investors or noise traders does not affect the informational efficiency of the market because the noise traders will cancel each other out or even if the noise traders have a bias in one direction, market arbitrageurs will short sell and thereby reveal information to the market and push stock prices down to an efficient level.[22]

The emergence of behavioural finance in the early 1980s challenged the predictions of the three perfect market theorems and in particular the EMH.[23] Empirical research has found persistent anomalies in predicted stock market returns based on publicly available information and such anomalies are inconsistent with the predictions of the

[21] G Andrade, M Mitchell and E Stafford, 'New Evidence and Perspectives on Mergers' (2001) 15 The Journal of Economic Perspectives 103, 112.
[22] *Gilson* (n 3) 42.
[23] ibid 11.

EMH and serve to undermine the validity of the hypothesis.[24] Anomalies such as the "January effect" and the "Weekend Effect" which show evidence of persistent inflated returns in the first half of January to smaller firms and the negative abnormal returns over the weekends are examples which have undermined the EMH.[25]

More recently, the financial crisis has called into question the philosophy that even if not all investors are rational, the market will act rationally because arbitrageurs will seek to make a profit by shorting overvalued stock and thereby correct mispricing. Additional research has shown that where there are strategic complementarities, rational players will follow noise traders due to the inherent risks and agency costs of arbitrage[26] as 'brains and resources are separated by an agency relationship'.[27] Strategic complementarities are said to exist if an increase in an action by one irrational player (such as the buying of an asset) will incentivise the rational player to increase in the same action (also buy the asset). Where strategic complementarities are present, the irrationality of a small number of individuals may lead to large deviations from the predictions of the EMH. By contrast, where there is strategic substitutability, an action by an irrational player will incentivise a rational player to take the opposite action and there will be no impact of the irrationality on the market.

Hence, the debate about whether there should not be predictable trends in assets markets due to the action of rationale arbitrageurs is a debate about whether the action of rational traders and noise traders are strategic complements or strategic substitutes.[28] In the perfect world of the EMH, strategic substitutability prevails and the irrational players will have no impact on the market. In the real world arbitrageurs face at least three kinds of risk: fundamental risk; noise trader risk and synchronisation risk which discourages them from acting rationally and may act as an incentive for them to follow their irrational counter-parts and exacerbate an asset

[24] ibid 14.
[25] ibid 13.
[26] E Fehr and J-R Tyran, 'Individual Irrationality and Aggregate Outcomes' (2005) 19 Journal of Perspectives 43, 63.
[27] *Gilson* (n 3) 45.
[28] *Fehr* (n 26) 63.

bubble.[29] This is because, due to the inherent costs and risks associated with arbitrage, professional traders are often more inclined to ride a bubble and cash out before it bursts than correct market mispricing.[30] Further, regulatory restrictions on short selling combined with the reticence of mutual funds to endorse short selling in their charters, thwarts the effect of arbitrageurs in correcting market inefficiencies.

The perfect market assumptions underlying the EMH do not hold in the real world and the recent financial crisis provides us with evidence that markets are not always efficient in that prices do not always reflect fundamental values. Before we can analyse whether or not lawyers add value in the imperfect world in which we live, or indeed if they do, whether they could still add value if we lived in the EMH world of perfect markets, we need to determine what it is that business lawyers do.

What do business lawyers do?

Perhaps surprisingly, there is not a straightforward answer to the question of what is it that business lawyers actually do. According to Kurt Vonnegut, 'a lawyer should be looking for situations where large amounts of money are about to change hands'.[31] In Vonnegut's illustration of this point, a professor describes the reasons for this advice to a law student:

> In every big transaction [the professor said], there is a magic moment during which a man has surrendered a treasure, and during which the man who is due to receive it has not yet done so. An alert lawyer will make that moment his own, possessing the treasure for a magic microsecond, taking a little of it, passing it on. If the man who is to receive the treasure is unused to wealth, has an inferiority complex and shapeless feelings of guilt, as most people do, the lawyer can often take as much as half the bundle, and still receive the recipient's blubbering thanks.[32]

[29] ibid.
[30] *Gilson* (n 3).
[31] RJ Gilson, 'Value Creation by Business Lawyers: Legal Skills and Asset Pricing' (1984) 94 The Yale Law Journal 239, 241.
[32] ibid.

This description is illustrative of the commonly held uncharitable perception of lawyers in society as being agents who hinder or kill transactions.[33]

The benchmark test for whether or not lawyers add value is whether the transaction is worth more as a result of the lawyer's contribution to the transaction, taking into account the fees that he is to be paid. It is important to note here that we are talking about transaction value as a whole and not a lawyer's ability to secure a greater slice of the transaction pie for his particular client but rather that all parties to the transaction will be better off as a result of the lawyer's involvement.[34]

Ronald Gilson, in his analysis of the Capital Asset Pricing Model ("CAMP") and the role of business lawyers, suggests that, 'in a world in which assets are valued according to any version of capital asset pricing theory, there is little role for business lawyers'.[35] The rationale is that because the price of an asset will directly reflect its value, any fee charged by business lawyers for any services would decrease the net value of the transaction and therefore lawyers could not create value. Given that both CAPM and the EMH are predicated on the basis of the perfect market assumptions, we can apply Gilson's reasoning to a world in which the central assumptions of the EMH hold and similarly conclude that there would be few, if any, opportunities for the transactional lawyer to generate value.

The reason that there would be few opportunities to generate value would be because there would be no role for the lawyers to play in ameliorating information asymmetries through due diligence and no need for a reputational intermediary because regardless of a seller's inherent incentive to mislead the buyer, there would be no point because the market price of the shares would accurately reflect the value of the company. However, given that the perfect market assumptions underlying CAPM and the EMH do not hold in the real world, there is scope for business lawyers to add value in the real world. This part of the analytical discussion is more salient for the purposes of academic research.

[33] ibid 242.
[34] ibid 245.
[35] ibid 251.

According to Gilson and Kraakman it is precisely because the perfect market assumptions of CAPM and in our case the EMH do not hold in the real world, that there is scope for business lawyers to add value. The central assumptions of the EMH that do not hold and which create the most opportunity for business lawyers to add value may be characterized as follows:

(a) there are no transaction costs;
(b) all information is costlessly available to all investors; and
(c) investors have homogeneous expectations.[36]

According to Gilson, the failure of these perfect market assumptions creates an opportunities for business lawyers to innovate and thereby improve the efficiency of the market. Provided that the costs of such innovation do not exceed the gains, value in the sense of increasing the size of the pie, may be created.

Does what business lawyers do add value because they act as 'transaction cost engineers'?

In a world in which the perfect market assumptions of CAPM (and in our case the EMH) do not hold, Gilson proposes the following hypothesis for the way in which business lawyers can create value, 'Lawyers function as transaction cost engineers, devising efficient mechanisms which bridge the gap between [the EMH]'s hypothetical world of perfect markets and the less-than-perfect reality of effecting transactions in this world'.[37]

Failure of the No Transaction Costs and Costless Information Assumptions

We can take it as given that transaction costs exist in the real world in every transaction. One of the main costs of a transaction is the cost of acquiring

[36] *Gilson* (n 31) 252.
[37] *Gilson* (n 31) 255.

information. From the seller's perspective, it is in the seller's best interests to make information available to the buyer at the lowest possible cost because if the seller withholds information or makes it very costly for the buyer to obtain, the buyer will naturally assume that the information will have a negative impact on the buyer's assessment of the value of the business[38] and will therefore be willing to pay less for the business.

In addition, if the buyer's transaction costs are reduced there is more of the transaction pie left for the seller. There is an incentive for both parties to cooperate to reduce information asymmetries between them so as to reduce transaction costs to the extent possible. Acquisition agreements commonly stipulate ways in which the parties will cooperate with respect to information sharing, information transfer, and information production so as to minimise costs and avoid duplication.[39]

Representations and warranties are a neat legal solution to the problem of information asymmetries between the buyer and the seller. Further due diligence on behalf of the buyer and further information production, collection or procurement on behalf of the seller may unnecessarily increase transaction costs in circumstances where it may be more efficient for the seller to warrant the state of affairs of particular matters, qualified by disclosure and possibly "so far as the seller is aware", having made reasonable enquiries. This also provides the buyer with a mechanism for suing the seller for breach of warranty rather than having to prove breach of a contractual term. Information asymmetries will always exist between a buyer and a seller in any transaction but the relevance of the asymmetries in a business acquisition, for example, is the impact on purchase price.

If the EMH assumptions held true, buyers and seller would have the same expectations about the present and future value of the company in question, there would be no need for representations and warranties and lawyers would not have the opportunity to create value in this way.

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[38] *Gilson* (n 31) 270.
[39] *Gilson* (n 31) 271.

Failure of the Homogeneous Expectations Assumption

If buyers and sellers had homogenous expectations about the current and future risk and return of a business, there would be no place for lawyers in negotiations, as the buyer and seller would automatically agree on price. Gilson and Kraakman make the point that a lawyer can create value by structuring a transaction in such a way that the homogeneous expectations assumption holds true.

The "earn out" is one such response to the issue of heterogeneous expectations. The earn out, often referred to by economists as a state-contingent contract, reduces the heterogeneous expectations of the parties by removing the uncertainty of future earnings and making the purchase price contingent upon those future earnings such that the purchase price is paid over time. Typically, an upfront payment will be paid together with additional payments paid on the basis of an indicator of performance such as sales. In devising the earn out structure, the lawyer has created value by permitting the transaction to proceed by aligning the parties expectations.[40] Gilson and Kraakman argue that there is also the potential for the earn out to increase the total value of the deal. The risk to the buyer of over paying for the assets is virtually eliminated and so the buyer should be willing to pay a higher price for the asset because there is no risk[41] and therefore the value of the deal is potentially increased. Again, if buyers and sellers had homogeneous expectations regarding future earnings of the company, there would be no need for an earn out, and lawyers would not have this opportunity to create value.

Does what business lawyers do add value because they act as 'reputational intermediaries'?

A typical task for a transactional lawyer on a financing transaction and sometimes on a corporate transaction is the production and delivery of a legal opinion. A legal opinion is generic in form and covers relatively straightforward matters. However, it

[40] *Gilson* (n 31) 264.
[41] *Gilson* (n 31) 264.

is a document of significance for both the client and the lawyer as the adverse consequences of a legal opinion not being correct are considerable for both parties.

Gilson makes the point that a buyer of an asset must rely on information provided by the seller with respect to the asset. The seller has a natural incentive to cheat and the buyer knows this so the buyer will require some form of verification of the information. Verification by the buyer may be too costly, inefficient or just not effective given the nature of the asset. The buyer will always be aware that the seller may have cheated.[42]

Gilson suggests that this is where third party lawyers can offer their reputation as a form of verification. Indeed, scholars have considered why the performance of this particular task has fallen to lawyers when the production of a legal opinion could arguably be performed by accountants or other professionals.[43] In the example of the legal opinion, the lawyer offers his reputation as a 'bond' for a client's performance.[44]

The concept of lawyers serving as reputational intermediaries is based on the 'reputational capital paradigm'.[45] In a one-time trade it is established that producers will cheat their customers and agents will cheat their principals. The opportunity for repeat business on the basis of not cheating or a good reputation constrains the incentive to cheat. Provided that the income generated by having a good reputation is greater than the profit to be obtained from cheating on one occasion, then the firm will not cheat.[46]

According to Gilson there is a:

> Critical role….for third parties to act to close the verification gap left by the seller's residual final-period problems. Suppose one could discover what can be called a reputational intermediary: someone paid to verify another party's

[42] KS Okamoto, 'Reputation and the Value of Lawyers' (1995) 74 Oregon Law Review 15, 18.
[43] ibid.
[44] ibid.
[45] ibid 22.
[46] ibid.

> information. When residual final-period problems prevent a seller from completely verifying the information it provides, a third party can offer its reputation as a bond that the seller's information is accurate.[47]

If buyers and sellers had homogeneous expectations, there were no information asymmetries and information was costlessly available, there would be no need, or a diminished need, for a reputational intermediary and lawyers would not have the same opportunities to create value in this way.

Does what business lawyers do add value because they act as 'regulatory cost engineers'?

Steven Schwarcz has found evidence to support the proposition that transactional lawyers add value principally by reducing regulatory costs, rather than acting as 'transaction cost engineers' or 'reputational intermediaries'.

Gilson, Mnookin, Gardner and Okamata argue that business lawyers add value primarily by reducing transaction costs and acting as reputational intermediaries. As Gilson identifies, these roles can and often are performed to a large extent by other professionals such as investment bankers or accountants. Schwarcz suggests that the utility of lawyers would be 'questionable if not fungible' unless they added significant value in their capacity as lawyers.[48]

Schwarcz's findings support the hypothesis that transactional lawyers add value by reducing regulatory costs. This expertise includes designing security structures that are effective and enforceable, priority and subordination deeds that are enforceable, ensuring that legal entities are correctly established, that covenant protections are adequate in the case of a loan agreement and many other activities performed by lawyers as identified by Schwarcz.[49] Schwarcz's findings conflict with existing

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[47] *Gilson* (n 31) 289.
[48] SL Schwarcz, 'Explaining the Value of Transactional Lawyering' (2007) 12 Stanford journal of Law, Business & Finance 487.
[49] ibid 501.

scholarship which suggests that the value that may be added by business lawyers may also be added by any other sophisticated negotiating parties.[50]

Gilson would no doubt argue that there is no distinction between Gilson's 'transaction cost engineer' and Schwarcz's 'regulatory cost engineer' and that the activities of lawyers in reducing regulatory costs are actually adding value by reducing transaction costs. In a world in which there were no transactions costs, it would seem that there will be little, or at least less, scope for transactional lawyers to add value by acting as regulatory cost engineers.

If business lawyers do generate value, would there by any opportunities for this value creation if the central assumptions of the EMH held true?

In a world in which the perfect market assumptions underlying the EMH hold true, it appears that there would be little, if any, scope for lawyers to add value in the sense of increasing the size of the transaction pie.

There is no doubt that in the real world, the perfect market assumptions do not hold, transaction costs are pervasive, information asymmetries persist, information is costly, investors are not always rational and do not have homogeneous expectations.

There is a distinction to be drawn between the perfect market assumptions underlying the EMH and the hypothesis itself. This essay has briefly considered the validity of the EMH itself for the sake of analysis and concluded that whilst the EMH may be a useful hypothesis, the market often gets is wrong and fails to accurately reflect available information leading to pricing bubbles and mispricing as evidenced by the recent global financial crisis. We have also seen that arbitrageurs do not always intervene to correct mispricing in the way in which the EMH would predict and given that they are risk averse they may sometimes prefer to ride a bubble or short a fundamentally good stock in the hopes of driving it down and making money.

[50] ibid 502.

Given that in the real world the perfect market assumptions do not hold, it is therefore interesting for us to analyse the role which lawyers play and the way in which they add value, if at all, to transactions. The failings of the central assumptions of the EMH, being perfect market assumptions, pave the way for lawyers to create deal value.

Gilson presents the most compelling arguments in support of the ability for transaction lawyers to add value in the sense of increasing the pie. This essay has focussed principally on the ability for lawyers to increase value by reducing transaction costs, acting as reputational intermediaries and by reducing regulatory costs. Each one of these opportunities for lawyers to create value is born out of the failure of the perfect market assumptions.

It follows that if the perfect market assumptions were to hold true in the real world one would expect to observe few, if any, opportunities for the transactional lawyer to generate value. However, fortunately for lawyers, in the real world it would seem that lawyers can and do create real value.