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Modern Credit and Investment Disaggregation;

A Recombinant Approach to Originating an Investment

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Modern Credit and Investment Disaggregation;

A Recombinant Approach to Originating an Investment

Investment Disaggregation is to the origination of an individual investment what Portfolio Theory is to the construction of a diversified investment portfolio.

Background

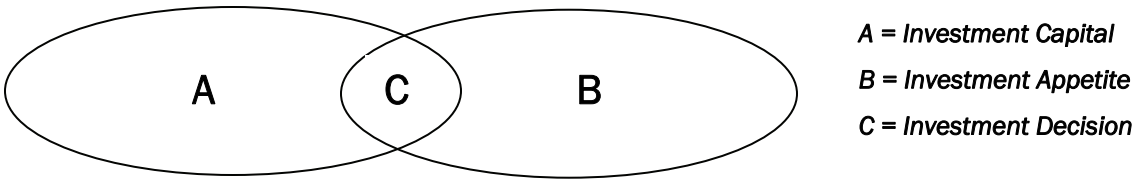
In every investment scenario there are always a minimum of two parties; an investor that is the source of capital for an investment and an investment recipient who will apply that investment capital to an approved asset or opportunity. At the most basic level, every investment initiates at the intersection of an investor's belief in the probability of investment success of a particular opportunity and the investment capability of that investor. Or, put another way, when appetite for a specific investment and capital availability coexist in an investor, the target investment is most likely to be viewed favorably and acted upon by that investor. These two investment components remain inextricably bound within the fabric of an investor's investment decisioning process like protons and neutrons in an atom; both are required and neither is less important than the other. Although the existence of both components does not guarantee an investor will act to invest in a target investment or opportunity, if both do not exist at the same time and in the same space, an investment will assuredly not manifest.

This paper focuses on an alternative hypothesis for increasing the chances of bringing these two components together with regard to any investment opportunity through a disaggregation of investment appetite from capital access within an investor community. We postulate that by disaggregating or bifurcating these two components from within a single investor context and instead source them from definitively separate investor groups within the capital markets — via an application of a set of repeatable systemic processes designed to bring together capital with investment appetite — the odds of achieving or initiating a subject investment increase and new vehicles for investment are created that better serve the needs of both source groups of investors. By accessing seemingly disparate investment source pools using a methodology that not only tolerates but thrives by splitting these foundational pieces apart, a wave of previously untapped economic energy will be released that improves the chances of identifying investment capital for any viable investment opportunity while enhancing investor opportunities through the advent and active application of a new enhancement-based credit asset class.

Before looking at this modern methodology for disaggregating capital availability from investment affinity, let's look at the anatomy of traditional investment decisioning as applied by investors when considering an investment opportunity ("Traditional Decisioning"). Based upon simple observation of investor behavior, one can surmise that only an investor having an equal measure of both capital and investment appetite will agree to invest in a particular opportunity. In fact, investment prudence through the application of certain rules inherent in portfolio diversification and selection strategies would call for an investor to likely always have greater capital availability than investment appetite for a particular subject investment in order to avoid investment concentration risks in the construct of its portfolio. Excess investor capital will be reserved for other opportunities that will be

brought together to comprise that investor's comprehensive investment portfolio or strategy. Ultimately, an optimized investment portfolio will be fully invested in a diversified selection of investments based upon the investor's application of some form of Traditional Decisioning such that the final portrait of an investor's portfolio will illustrate a 1:1 ratio of invested capital to investment appetite. Given this, if all available capital of an investor is equal to "A" and all investments in which the investor is currently invested or willing to invest is "B", then, the decision to invest in a particular subject investment opportunity for a defined investment amount is located at the intersection of A and B or area C as pictured in Figure 1.

Figure 1: Traditional Decisioning — Single Source Investor

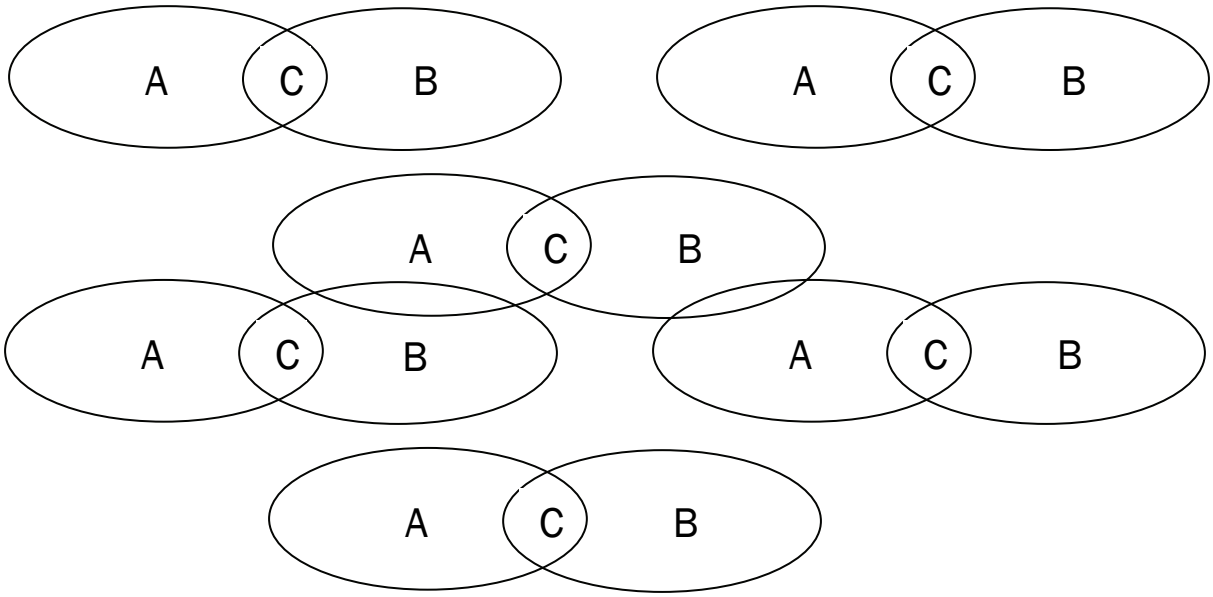


The investment behaviors illustrated in Figure 1 are intended to be an elementary representation of the internal decisioning processes of a single investor from which both capital and investment appetite are derived (a "Single Source Investor"). One may assume that every Single Source Investor observes a similar practice to Traditional Decisioning when determining to invest in a particular opportunity as a part of its investment portfolio construct. In the case of each such investor, the values in each of Group A and Group B, and, by extension, Group C are finite. They are therefore limited by both the amount of capital resources available to that particular investor and the nature of the investment strategy that such investor has elected to apply to its particular decisioning process. Moreover, in evaluating the absorption of a particular investment by several Single Source Investors that will or have exhibited an affinity for an investment, each investor, although aligned by their individual appetite for the promise of a particular investment, stand independently of the others, neither enhancing nor influencing the other investors by their actions (except as to a presumption of each investor's enhanced confidence in its own decisioning process resultant from the existence of similar independent investment determinations being reached by other investors). Therefore, the amassing of a target investment amount from a selection of independent investors for the benefit of a particular investment opportunity is a simple function of addition. An investment opportunity that requires an investment amount that is greater than the available capital and investment appetite of a single investor is achieved through a simple aggregation of additional investment amounts from several individual Single Source Investors. Each investor's determination to invest is again represented, respectively, by intersect C. See Figure 2.

It is significant to note that, although sophisticated financial structures inherent in such practices as securitizations and other similar credit and risk management vehicles have bred methodologies for the horizontal stratification or delineation of various risk profiles through the application of certain "capital stacking" or "credit tranching" methodologies designed to more efficiently attract capital to a single investment opportunity, the manner of investor absorption of each such stratification or credit tranche does not materially deviate from the aggregate decisioning practice illustrated in Figure 2. Accumulating critical investment mass for an investment or a particular risk profile within an investment structure is still a function of the convergence of capital availability and investment appetite within each Single Source Investor, regardless of the investment's risk profile or characteristics. Each investor will have independently applied a system of probabilistic beliefs about the success of an investment as viewed against the backdrop of the practical limitations imposed by the investor's finite amount of available capital. Thus, among other things, one may conclude

"… we intend to illustrate how a new maxim may be applied to the process of investment sourcing …. such that the likelihood of achieving the initiation of a particular investment opportunity will be increased …"

Figure 2: Aggregating a Target Investment Amount



$C_1 + C_2 + C_3 + \ldots\ldots + C_n = I$

I = Target Investment Amount

that even the most sophisticated investment and finance methodologies — designed to redress or repackage risks in an effort to produce a more marketable or appealing investment — produce no meaningful or material alteration to Traditional Decisioning practices by a target Single Source Investor group. Additionally, one may also conclude that when Traditional Decisioning is applied by each investor that may be approached with the same investment opportunity, the likelihood of successfully raising the desired amount of investment for that subject investment is a simple expression of the sum of the total amount of "capital"-"investment affinity" convergences derived from that selection of individual investors. A successful capital raise in this context correlates directly to the number of investors available to be solicited that have both capital and investment appetite for the subject investment. It follows that the primary means of increasing the chances of successfully raising the fixed amount of investment required for a particular opportunity is to increase the number of investors solicited.

Against the aforementioned backdrop, we intend to illustrate how a new maxim may be applied to the process of investment sourcing using a systematized disaggregation of capital availability and investment appetite ("Investment Disaggregation") such that the likelihood of achieving the initiation of a particular investment opportunity will be increased by a recom-

binant multiple of the total number of Single Source Investors solicited using the prior art approach thus far described. Additionally, the application of such a bifurcated anatomy for investment decisioning can foster the development of new investor portfolio strategies for portfolio selection, optimization and diversification, which will enhance both an investor's transactional and portfolio yields while systematically extricating at least a portion of the market from the Liquidity Trap[1] that at the time of this writing is retarding wide-spread economic growth and recovery.

A Structural Analysis of Disaggregation

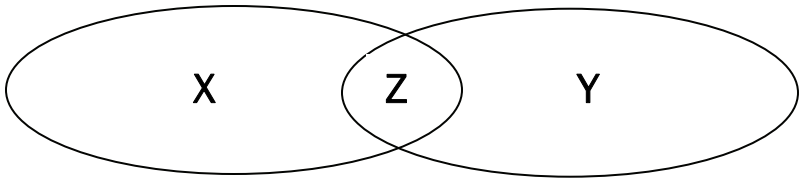
Investment Disaggregation may be generally applied to consumer or commercial market-level investment opportunities, such as project-based undertakings, mortgages, fund investments, private equity transactions, or some forms of asset-based acquisitions ("Tier 1 Investments"). Disaggregation is a function of the independent sourcing of capital from one investor (or group of investors) and investment support for a particular commercial or investment opportunity from a wholly independent investor (or group of investors) that share a strong expectation of investment success. Forms of disaggregation – primarily credit-based – have been historically applied in the marketplace, but generally not within a standardized, repeatable and fungible framework. In an efficiently structured disaggregated investment transaction, Traditional Decisioning in its classical representation is no longer a primary investor driver (except when considering certain events of default which will be briefly discussed later) at the Tier 1 Investment level. That is not to say, however, that some degree and form of Traditional Decisioning doesn't play a role in an investor's decision to deliver either capital or investment support at the Tier 2 Investment level, but it is to say that the role of Traditional Decisioning outside of a Single Source investment model is significantly simplified and diminished in relevance by comparison. In its preferred embodiment on the Tier 2 Investment level, neither the investor that provides capital ("Capital Source") nor the investor that provides investment support ("Enhancement Source") needs to itself possess the other component in order to proceed in taking up a roll in the proposed disaggregated investment transaction. Through an application of the Investment Disaggregation model, each of these investor profiles can be independently motivated to participate through the positioning of each of the Tier 2 Investment components in such a way that they appeal, respectively, to the unique investment needs and appetites of each group of candidate source investors.

"Disaggregation is a function of the independent sourcing of capital from one investor ... and investment support for a particular commercial or investment opportunity from a wholly independent investor … "

In considering the anatomy of the investor marketplace in a traditional investment approach, Figure 3 illustrates that the marketplace is fundamentally broken into those investors seeking to stay in cash or cash equivalents and those investors with the desire to gain some form of commercial investment exposure. Where those capabilities and desires converge with regard to a particular investment opportunity, we will find the Single Source Investor market segment, which may potentially support that opportunity. It is no coincidence that this diagram closely resembles that which was portrayed for Traditional Decisioning since investor group behavior generally is merely a larger reflection of individual investor behaviors.

[1]A set of circumstances created when, among other things, Keynesian Economic Theory is broadly applied as a means to suppress or control interest rates, which inadvertently results in economically dis-incentivizing long-term investment strategies, ultimately, leading investors to remain in short-term, cash-like investments that generally stifle economic recovery in periods of fiscal duress.

Figure 3: Market Segmentation of Investor Groups for Particular Investment



X = All potential Cash Sources

Y = All potential Enhancement Sources

Z = All potential Single Source Investors

Interestingly, by analyzing this simple diagram, we see that the number of Single Source Investors having both available capital and proven potential investment appetite for a particular investment are embodied in market Group Z. If we overlay what we know of the marketplace from this diagram on to a systemically disaggregated transaction template, we can increase the potential number of investor combinations that can come together to initiate or originate a subject investment transaction. We know from the above that Group Z represents the minimum number of investors in the market that have both capital and appetite for a given investment. This would also represent the minimum number of potential investors in Group Y that could act as the Enhancement Source for a subject Tier 1 Investment. Additionally, the maximum number of investors in Group Y that may have a probabilistic expectation of success of the subject investment may be as many as all members of such group. However, under traditional investment circumstances in which Single Source investment practices prevail, that undefined segment of Group Y (defined as $Y - Z$) would likely remain undefined as to their respective investment inclinations. Those members of the group are known to lack the required amount of capital to execute the subject investment transaction and, in practice, would therefore likely not have engaged in a full investment evaluation. We also know from the basic behavior of an Investment Disaggregation that all investors in Group X are agnostic to the underlying investment profile of any subject Tier 1 Investment. As a result, each are candidate sources of capital for the subject investment or could elect to act as the Capital Source. Therefore:

*Given, under a traditional Single Source investment approach, the field of candidate investors for a particular subject investment will be **Z**;*

*Then, under an applied Investment Disaggregation methodology, with all market factors and groups remaining static, the minimum field of candidate investor combinations for a particular subject investment will be increased — multiplied by a factor of **X** — calculated as **(X)(Z)** and the maximum field of candidate investor combinations will be **(X)(Y)**.*

In light of the above, the desirability of disaggregation of core investment components of capital and investment support is not a new concept and has proved to be an effective vehicle in furtherance of select Tier 1 Investment transactions. A basic model for expressly traditional *credit* disaggregation has been historically applied in the short-term commercial paper marketplace primarily in the United States following the tax code changes of 1986. As can be seen in Figure 4, the core components of investment support and capital access on a Tier 2 Investment level are clearly delineated between two different source investor groups, demonstrating the practical basis for the successful execution of this type of disaggregated transaction. Generally, in these traditional credit disaggregation transactions as well as in a deployment of the more advanced Investment Disaggregation method described in this paper, the Capital Source is identified with an expansive segment of investors in the capital marketplace seeking a highly efficient, reliable and consistent access point for cash-like or money-

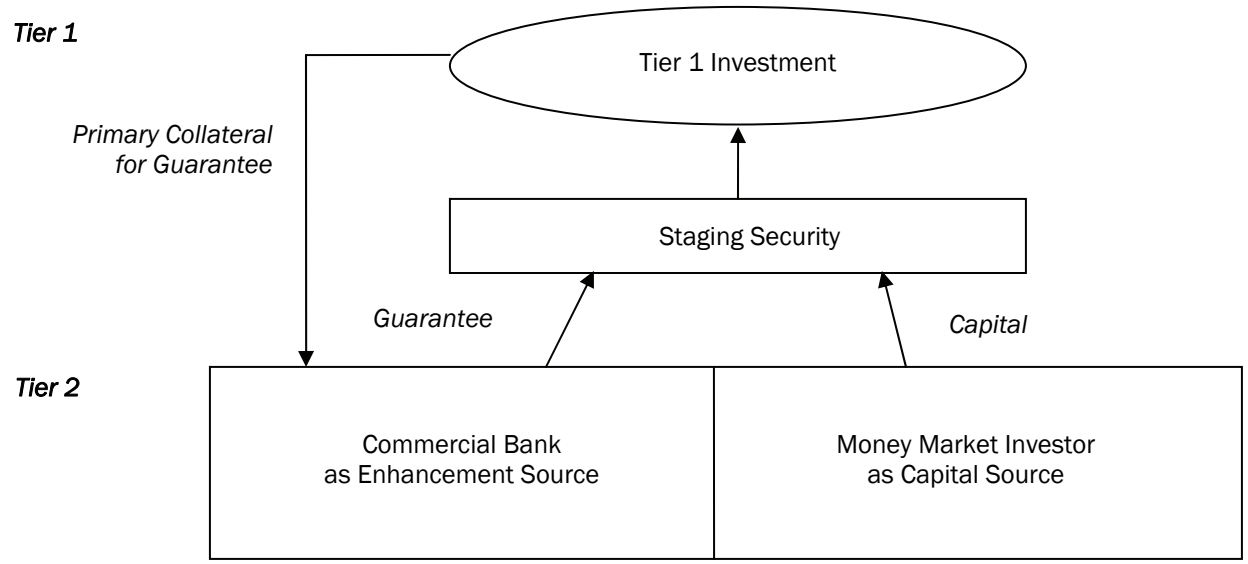
"… under an applied Investment Disaggregation methodology, … the minimum field of candidate investor combinations for a particular subject investment will be increased — multiplied by a factor of X …"

market quality investment exposure. As a general rule, efficient capital access as required by the operation of the Capital Source function of a disaggregated transaction is best-assured by the association of a high credit quality payment undertaking ("Guarantee") in support of any form of debt obligation acceptable to the investors acting as the Capital Source. That Guarantee must be clear, irrevocable and free of any conditions that are not otherwise explicitly defined on its face, which creates conditions that insulate the Capital Source from the underlying investment, risk, and performance behavior of the subject Tier 1 Investment. Then, a "staging security" is inserted into the process that re-aggregates or brings together the independently sourced investment components in support of the allocation of capital to the Tier 1 Investment. And, with this, the first stage of identifying and positioning the Capital Source in a disaggregated credit or investment transaction is achieved.

However, the true sophistication of any type of disaggregated credit or investment transaction rests in the efficiency of the method for segregating the investment exposure reflecting the behavior of the subject Tier 1 Investment. Stated another way, the means and structure applied to identifying and sourcing the Enhancement Source on the Tier 2 Investment level is critical to manifesting consistency and scalability of any applied Investment Disaggregation system. It is significant to note that in basic credit disaggregations as previously deployed in the market, the equivalent of the Enhancement Source seeks to secure its credit support solely against the very asset or project being undertaken as the Tier 1 Investment. As can be seen in Figure 4, this practice creates circularity in the transaction. This condition limits the type of investments that may be undertaken, constricts the field of investors/entities that may be solicited as the Enhancement Source (since this same entity must also be capable of issuance of its own Guarantee), tethers the risk weighting of the Guarantee (that evidences the investment undertaking by the Enhancement Source) expressly to the profile of the Tier 1 Investment, and hinders the fungibility of any beneficial ownership interest in this investment component. All of these factors converge to impair transaction efficiency, flexibility and agility when employing a credit disaggregation method consistent with prior art practices.

By contrast, the structural characteristics and systems of gaining access to the Enhancement Source — under the modern investment disaggregation maxim proposed — abandons the prior art disaggregation method in which a circular and primary underlying security interest in the Tier 1 Investment is established. Instead, the investor that elects to provide

Figure 4: Anatomy of a Prior Art Credit Disaggregation

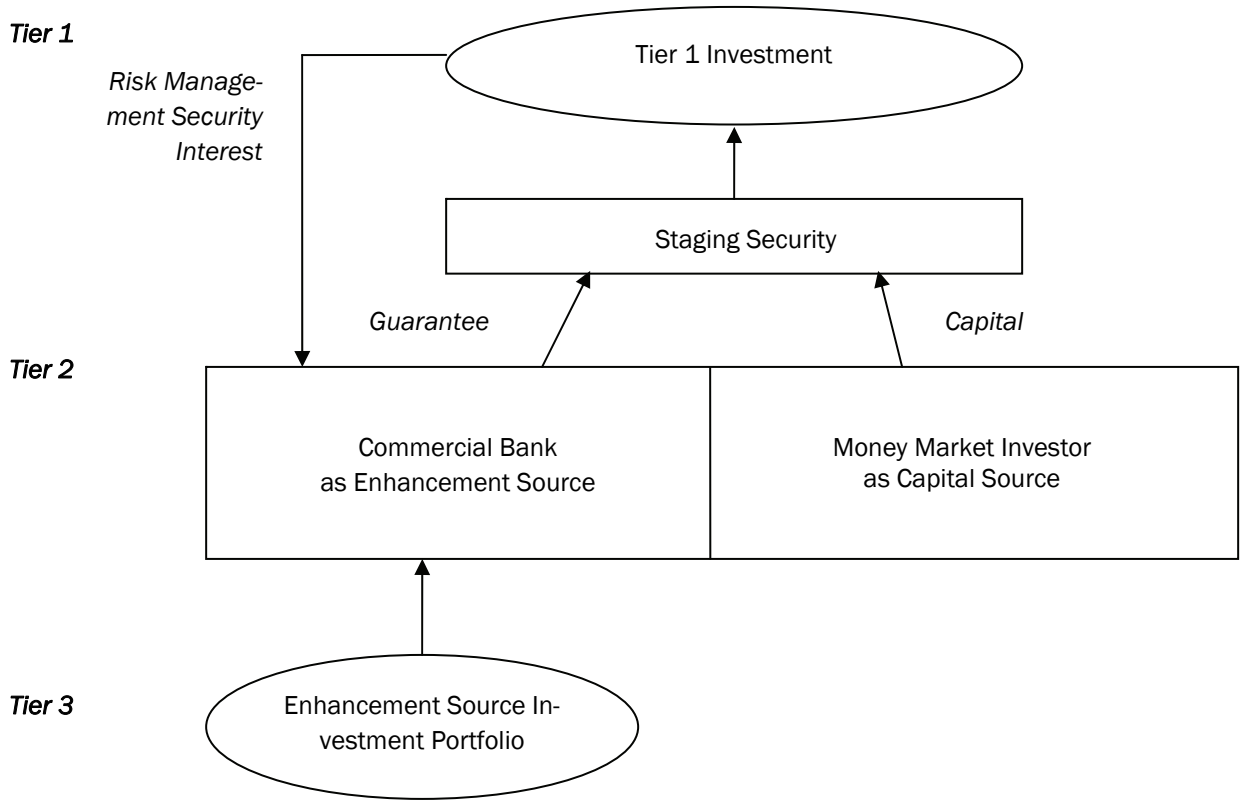


the Enhancement Source for a particular Tier 1 Investment secures its investment support against wholly independent assets that constitute all or any portion of such investor's underlying investment portfolio. In effect, an investor with a credit appetite for a particular Tier 1 Investment elects to act as the Enhancement Source by overlaying a disaggregated investment structure on its own independently owned Tier 3 Investment Portfolio. In this way, the investor is able to introduce a method of enhancing its Tier 3 Investment Portfolio with the performance of the Tier 1 Investment, wherein any security interest granted in the Tier 1 Investment is solely a risk mitigation or management tool rather than a *primary* source of underlying collateral or security to the investor. All of this is as illustrated in Figure 5 .

The significance of the foregoing structural improvement in an Investment Disaggregation may not be apparent on its face. However, through an elimination of the historically accepted circular nature of integrating Tier 1 Investment collateral as the primary collateral for a Tier 2 Enhancement Source, we can illustrate far-reaching effects on the efficiency of Enhancement Source identification, investment dynamics in managing risk and liquidity, true scalability of disaggregated investment transactions in the open capital marketplace, and, ultimately, the ability to foster the creation of a new type of fungible security that represents either a whole or fractional beneficial ownership interest in the Enhancement Source.

For purposes of comparison and as mentioned previously, in a disaggregated credit transaction in accordance with prior practices, most often, the investor that played the role of the Enhancement Source would also have been the institution that would issue the Guarantee evidencing the full credit support of the Enhancement Source for the Tier 1 Investment ("Guarantee Issuer"). This means that Guarantee Issuer would customarily be a bank, financial institution, or other rated and credit worthy counter-party. This, because in any disaggregated transaction, it is the rating of the institution issuing the Guarantee – not the nature of the Tier 1 Investment or the profile of the Enhancement Source – that becomes the feature upon which the Capital Source focuses in its investment decisioning process. As explained earlier,

Figure 5: Anatomy of a Modern Investment Disaggregation



these Guarantee Issuers would offset their risk with a direct collateral or security position on the assets of the subject Tier 1 Investment, thus, introducing the circular collateral feature illustrated in Figure 4. This approach is consistent with the mortgage or loan practices of these institutions, and as a result, taking a senior secured primary collateral position on the asset or project would not be deemed an unusual practice. However, the disadvantages or limitation of this approach are prevalent when examined more closely.

Specifically, only Tier 1 Investments that conform to or satisfy more traditional senior secured lending policies would be candidate to benefit from the prior art credit disaggregation approach in seeking to originate an investment and identify investors. The collateral of the Tier 1 Investment must therefore have been "bankable" for the transaction to proceed since that collateral is the sole source of credit security and repayment to the Guarantee Issuer. This significantly narrows the field of potential investments that may be a benefactor of historical disaggregation practices to only those that could generally qualify for a traditional loan with a commercial bank.

Additionally, the limitations on identifying Enhancement Sources for prior art credit disaggregation became more pronounced in the wake of regulatory changes following the Financial Crisis of 2008. Regulatory authorities such as the Office of the Comptroller of the Currency began actively imposing and enforcing more conservative capital treatment and risk-weighting standards for banks and financial institutions that operate under its jurisdictional authority. Many such changes have since been reflected in FASB and IASB standards as well as within other regulatory frameworks. These tightened measures were designed to dissuade direct bank participation in disaggregated credit transactions since many of these institutions failed to sufficiently reserve for Tier 1 Investment risk in an event of default. In examining this practice, the regulatory authorities determined that since the institution was effectively inserting its credit as a "direct credit substitute", secured directly and primarily by the project or asset constituting the Tier 1 Investment, it was appropriate that the bank or institution reserve for loss as if it had already funded its Guarantee. The concern is that failure of that Tier 1 Investment would, in practical terms, threaten a similar loss to the financial institution as that which would be suffered if the institution had originally financed the investment. The result of these changes is generally a 100% risk weighting for a regulated institution's issuance of a Guarantee when secured by the Tier 1 Investment and acting as Enhancement Source in a traditional disaggregated credit transaction.

These two factors work together to both limit the nature of the Tier 1 Investments that are commercially viable to be disaggregated and reduce the number of banks or financial institutions willing to support a disaggregated credit transaction in today's market in the dual role of both Guarantee Issuer and Enhancement Source in accordance with prior practice. Thus, without an alternative approach to disaggregation, the marketplace is without a scalable means of unlocking the benefits of this structure in any sort of meaningful manner.

" ...in any disaggregated transaction, it is the rating of the institution issuing the Guarantee – not the nature of the Tier 1 Investment or the profile of the Enhancement Source – that becomes the feature upon which the Capital Source focuses in its investment decisioning process."

In further considering Figure 5, we see that because the Enhancement Source's own Tier 3 Investment Portfolio becomes the source of support to the Guarantee Issuer, virtually any investor holding Tier 3 assets acceptable to a Guarantee Issuer can participate in an Investment Disaggregation for which it has an appetite. Likewise, because the Tier 3 Investment Portfolio is the sole source of collateral for the Guarantee, provided the nature of these assets is acceptable to the Guarantee Issuer, the Guarantee Issuer can remain fully agnostic to the nature of the Tier 1

"… when the core thesis behind Investment Disaggregation -- disaggregating capital sourcing from investment appetite — is applied, the pool of investor combinations that are able to initiate an investment increases...."

Investment, since it will not accept any security interest therein. As such, it will benefit from regulatory capital treatment of its Guarantee consistent with the nature of the Tier 3 Investment Portfolio over which it accepted a pledge.

Overall, through an application of the Investment Disaggregation practices ascribed in this paper, the nature of potential Tier 1 Investments become far more flexible while conforming with best practices of both the Enhancement Source and the Guarantee Issuer, thereby expanding the scope of available participants in each role. Additionally, because the Enhancement Source is not necessarily bound by particular lending practices that may be as narrow as those observed by a commercial bank or similar institution as had been the case in prior art disaggregations, the nature of Tier 1 Investments to be undertaken may now be expanded to include virtually any investment for which an Enhancement Source has an investment appetite, including mezzanine lending, revenue participation structures, private equity investments, and other equity-like investment transactions.

As illustrated above, when the core thesis behind Investment Disaggregation -- disaggregating capital sourcing from investment appetite — is applied, the pool of investor combinations capable of initiating an investment increases. Similarly, when the role of a Tier 2 Enhancement Source is disaggregated from that of Guarantee Issuer, the pools of institutions available to serve in both roles may be expected to expand. Particularly, the profile of investors that are suitable as an Enhancement Source increases beyond the historical limitation of primarily consisting of banks or other rated institutions to now include any investor that both has an appetite for a particular Tier 1 Investment and possesses Tier 3 assets that are available to be pledged in support of the Guarantee. Likewise, the Guarantee Issuer enjoys more efficient underwriting and improved capital treatment of the Guarantee when secured by Tier 3 assets having a defined quality that supports a more traditional, low-risk credit transaction.

role of guarantee

In looking more closely at the role of the Guarantee as the vehicle to evidence the support provided by the Enhancement Source, we also note that in a modern Investment Disaggregation, the Guarantee serves yet another purpose that contributes toward a more dynamic and liquid market for disaggregated transactions. Under an Investment Disaggregation, the Guarantee constitutes the payment consideration tendered by the Enhancement Source for the purchase of a new class of security that represents a beneficial ownership interest in the collateral structure and yield, interest, income or performance-based returns of a Tier 1 Investment transaction. The security purchased by the Enhancement Source carries with it the profile of the Tier 1 Investment, better enabling the subsequent purchase, sale or trade of the economic and investment interest in the Tier 1 Investment.

The creation of this type of "unfunded" investment vehicle that can be purchased not by payment of cash consideration, but by presentation of a compliant Guarantee evidencing the Enhancement Source's ability and commitment to remit funds if and when required at some future date produces an array of benefits to the Enhancement Source that are not in any way available to an investor in a traditional investment transaction. These benefits include (a) a significant reduction by as much as 99% in the cash-basis of a Tier 1 Investment transaction when com-

benefits

These benefits include

- a significant reduction in the cash-basis of an Investment transaction
- decreased opportunity costs of investment
- improved tolerance to long-term investment transactions
- increased cross-border investment capability
- enhanced investment returns for the Enhancement Source

pared to a Single Source approach — since the Enhancement Source's sole transaction expense would be constituted by the cost of issuance of the Guarantee, (b) decreased opportunity costs of investment — since Tier 3 Investments need not be liquidated in order to gain exposure to a Tier 1 Investment; (c) improved investor tolerance to long-term investment transactions — since primary current income and cash flows are being derived from Tier 3 Investment Portfolio performance, permitting the Tier 1 Investment to be treated as a form of yield enhancement to Tier 3 assets for as long as the Guarantee remains undrawn and the Tier 1 Investment does not default; (d) increased cross-border investment capability — since the Guarantee permits the Enhancement Source to gain Tier 1 Investment exposure without the movement of cash currency between varied jurisdictions; (e) greater liquidity — since the security representing the interest in the Tier 1 Investment can be consistently valued through the use of evaluative or indicative pricing models; and (f) enhanced investment returns — for the following reason:

> *Participation in a disaggregated transaction as an Enhancement Source requires only the ability to lend or pledge credit or investment support in reliance upon the investor's independent assets and a limited amount of liquid funds. Because of this, there is a naturally occurring increase to the transaction investor's internal rate of return due not to increased production of yield, but rather reduced cash basis in the Tier 1 Investment. The net effect is a significant yield enhancement potential since the cash cost of investment may be as low as a fraction of 1% of the par value of the disaggregated Tier 2 enhancement component while yield generation remains tied to the performance of the par value investment.*

All of these potential benefits work together to more painlessly foster the growth of a credit market environment in which current income streams can be maintained while long-term wealth can be concurrently rebuilt. The duality of this position straddles the gap between an investor's desire to embed liquidity and current income production in its core portfolio and the need to seek out long-term, potentially illiquid investments in an effort to drive up overall portfolio returns.

Understanding the Math

As Benjamin Franklin affirmed, a penny saved is a penny earned. In the field of investment, this sentiment can be framed as a decrease in the cost of capital is an increase in yield. Oftentimes, however, this is not necessarily the prevailing approach among investors. When it comes to capturing higher rates of return, an investor may take one of two primary courses or apply some combination of the two; (i) seek to increase underlying performance of an investment and enjoy the corresponding increase in yield, income, or returns, or (ii) decrease its cash basis in an investment without correspondingly decreasing the face value of the investment and the related returns. The former of the two is the standard-bearer underlying almost every investment philosophy — an investor looks for the highest performing, income-producing investment and then invests in it to increase portfolio earnings. This is a direct reflection of an elementary principle that, if one wants more money, one needs to earn more money. A simple principle, but not necessarily as simple to apply.

Just as Mr. Franklin realized that saving money is virtually the equivalent of earning money, through an application of the principles of Investment Disaggregation, we can see a route to decreasing the cash cost of investment while still also obtaining exposure

"… a penny saved is a penny earned. In the field of investment, this sentiment may be framed as a decrease in the cost of capital is an increase in yield."

to target investment earnings similar to those that would have been available through an application of a conventional investment approach. In practical terms, the opportunity to earn a comparable investment income within a framework in which the cost of gaining that investment exposure is a fraction of the cost of doing so conventionally brings with it the ability to significantly increase the investor's rate of return when compared to a fully funded conventional Single Source investment approach.

For the purposes of illustration, we will establish a baseline for comparison by referencing a sample transaction characterized expressly as a credit equivalent. In constructing this transaction, we will make some assumptions that will aid in contrasting a Single Source conventional investment approach with that of the Investment Disaggregation model. There are techniques for the application of Investment Disaggregation to investment transactions having an array of characteristics including a blend of credit-like fixed returns with performance-based revenue participations, pure revenue-based performance participations, and equity-like models that exhibit both current performance-based participations and long-term profits interests. We will not delve into the disciplines required to implement these more sophisticated investment models in this paper, except to recognize that the efficiencies discussed here are readily and further enhanced by Investment Disaggregation principles when applied to mezzanine debt, revenue participation, and equity-based equivalencies. These techniques and supplemental principles will be discussed at greater length in a subsequent and more technical analysis.

We postulate in our example that we are engaging in a Tier 1 Investment requiring $10,000,000 in capital over a five year term with the principal due in full at maturity. All other factors concerning the commercial operation of the project will be the same, regardless of the means of investment sourcing.

Further, we know that the Capital Source in an Investment Disaggregation is at all times agnostic to the characteristics of the Tier 1 Investment. Therefore, its pricing may be considered as a relative constant that reflects market factors consistent with the behavior of money market or investment grade cash equivalent pricing. Given this feature, let us say that the Capital Sourcing component is consistently priced at some set margin (***s***) over current money market or cash equivalent rates (***m***), in which case, $C = m + s$. For the purposes of our example, let Y be the annual gross cost of capital or all-in yield payable to all investors — both Capital Source and Enhancement Source — in a disaggregated Tier 1 Investment, which means that the annual yield attributable to the Enhancement Source, called E, will always be equal to $Y - C$. Or, put another way, in a disaggregated investment, cost of capital payable from the Tier 1 Investment will always be equal to $(C + E)(I)$, where I is the principal investment amount. In our example investment, we have let C = 1.15% per annum.

To fully understand the impact upon the Enhancement Source returns in a disaggregated investment transaction, we will establish an equivalency based on only a few of the key structural iterations possible in a credit transaction. In this example, we seek to illustrate the comparative behavior of a credit-based Tier 1 Investment when funded conventionally using a Single Source Investment approach versus an Investment Disaggregation approach as described.

As a proxy, let us assume the gross return on the Tier 1 Investment is estimated at a consistent 6.5% per annum. Let's also assume that the cost of capital to the Tier 1 Investment operator is a constant, simple, interest-only 3.25% per annum when applying either the Single Source investment origination method or the Investment Disaggregation method and that there is no performance-based investment participation payable to an investor at any stage of the transaction. For the sake of this illustration, we have elected to

apply a simple interest-only loan schedule with principal repaid at maturity under the Single Source method. We do this because in a disaggregated transaction when applied as a strict credit equivalent, the Tier 1 Investment operator would be responsible only for the payment of current capital fees throughout each year and would not be subject to any interim repayment of principal. Therefore, the closest approximation of this same behavior within a conventional credit environment would be an interest-only return model. Let us first consider the mathematical impact on the Single Source Investor if our example was undertaken using this premise.

This would result in an internal rate of return to the Single Source Investor of 3.25% over the five year term, assuming a funding of all principal on the first day and collecting all principal at Maturity. The actual internal rate of return to the Single Source Investor should be further adjusted and reduced to reflect the netting out of the Single Source Investor's true cost of capital in making the investment, taking into account opportunity cost, liquidation fees to existing investments, and other factors particular to that investor in making the principal amount of capital available for investment. For purposes of our example, we make no attempt to quantify the Single Source Investor's cost of capital, except to recognize that the netting out of that cost would cause some reduction of our hypothetical transaction yield. We assert that the application of this adjustment is appropriate when seeking to create a true parallel to investor returns due to the Enhancement Source in this comparative sample transaction since, as we have seen in our $E = Y - C$ equation, in a disaggregated investment, the cost of the capital component is always clearly defined and directly reduces the gross yield payable to the investor acting as the Enhancement Source by an equal amount.

In an attempt to build upon this premise and illustrate these parallels, let us make some further assumptions as to Tier 2 and Tier 3 Investment considerations in analyzing the economic impact of the Investment Disaggregation model on this example transaction.

We assume the Enhancement Source is relying upon an independent bank or financial institution as Guarantee Issuer and that there will be a fee or charge due to such institution for the issuance of the Guarantee. Let f be the annual fee percentage charged to the Enhancement Source by the Guarantee Issuer for its Guarantee. We will further assume that the Tier 3 Investments being pledged by the Enhancement Source in support of the Guarantee are of a high quality and therefore this Guarantee issuance fee will be on the lower end of an anticipated or projected issuance cost spectrum, say, 0.8% per annum. The cost of the Guarantee will be calculated as $(I)(f) = G$, where G then also establishes the Enhancement Source's cash cost of investment in the Tier 1 Investment for purposes of subsequent analysis.

Tier 3 Portfolio

We have assumed that as a prerequisite to establishing a Guarantee, the Enhancement Source will have a Tier 3 Investment Portfolio available to pledge in favor of the Guarantee Issuer, and that the pledge of such assets will not disrupt their operation or continued generation of current or associated Tier 3 investment yield. The market value of such Tier 3 assets is assumed to be minimally equal to the face value of the Guarantee being issued, which is also equal to I as principal value of the Tier 1 Investment. Dependent upon the nature of the Tier 3 assets, an amount of overcollateralization may be required in support of the Guarantee, i.e., the pledge of stock certificates on the Tier 3 level may be limited by a regulatory restriction permitting only 50% of their value to be eligible for pledge, resulting in a 200% overcollateralization of the Guarantee. The degree to which an investor acting as the Enhancement Source may successfully yield enhance the aggregate returns on its Tier 3 Portfolio by the undertaking of a Tier 1 Investment may be directly effected by the determination of the Guarantee Issuer as to the quality and collateral value of Tier 3 assets being pledged. Therefore, if the rate of required collateralization of the Guarantee is A, then $(A)(I) = P$, where P is the minimum value of Tier 3 assets pledged. It follows that the higher the quality of Tier 3 assets pledged, the greater the net rate of yield enhancement of the Enhancement Source's overall Tier 3 Investment Portfolio since $[E - I(f)]/P = K$,

where ***K*** is the net percentage of additional yield or Portfolio Enhancement attributable to the Tier 3 assets pledged. Inversely, the more inferior the quality of assets pledged, the more diluted the Tier 3 Portfolio Enhancement rate will be resultant from a corresponding increase in the required rate of overcollateralization. In our example, we have assumed a relatively high quality of Tier 3 assets, requiring only a 110% rate of overcollateralization as determined by the Guarantee Issuer; thus, in our example, *P = $11,000,000.*

With the foregoing assumptions established, let us return to our sample transaction in order to discover the impact of an applied Investment Disaggregation on the Enhancement Source. We will look at the calculation of annual return on cash, the calculation of anticipated Portfolio Enhancement on the investor's Tier 3 Investment Portfolio, and then finally, the internal rate of return over the investment term.

variables

I = Principal Investment amount
C = Cost of the Capital Source
m = Money market rate
s = Spread over money market rate
Y = Gross Tier 1 Investment yield to all investors
E = Yield payable to the Enhancement Source ("EC")
f = the percentage charged for Guarantee issuance
G = Cost of the Guarantee and the cash cost of disaggregated investment
A = Minimum collateralization rate of the Guarantee
P = Minimum value of Tier 3 assets pledged
K = Rate of Portfolio Enhancement of Tier 3 assets
D = Gross amount distributed annually to the EC
N = Net amount of annual return to the EC
B = Annual rate of return on cash cost of investment
R = Internal rate of return on Tier 1 Investment

Given ***E = Y - C***, then the annual gross return payable to the Enhancement Source will be 3.25% less 1.15%, or 2.1%. This amount is then multiplied by the principal amount of the Tier 1 Investment to arrive at the gross amount of yield distributed annually to the Enhancement Source, defined as ***(E)(I) = D***, which in our example is $210,000. ***D*** will then be reduced by ***G***, which, as we know, is the annual cost of the Guarantee as well as establishes the cash cost of undertaking the Tier 1 Investment. This will then give us the net annual return to the Enhancement Source (called ***N***), calculated as ***D — G = N***, or $210,000 less $80,000 resulting in a net annual return to the investor of $130,000.

In comparing our example to virtually the same Tier 1 Investment transaction and using the same assumptions and credit transaction characteristics, we see that a conventional Single Source Investment will have a 100% or $10,000,000 cash cost of investment to the investor and generate a 3.25% internal rate of return on that amount over term. Whereas, the deployment of an Investment Disaggregation approach to this same example transaction — assuming the same 3.25% total cost of capital to the Tier 1 Investment operator — results in a cash cost of investment of $80,000 and the following return analysis for the benefit of the Enhancement Source:

i) The annual rate of return on the cash cost of investment (***B***) will be calculated as ***N/G = B***, where B in our example is then equal to 162.5%.

ii) The annual rate of Portfolio Enhancement of the Enhancement Source's Tier 3 Investment portfolio as pledged (***K***) will be calculated as ***N/P = K***, where K in our example is then equal to 1.18%.

iii) The internal rate of return on the Tier 1 Investment over the full 5 year term (***R***), assuming a straight-line and consistent value on all variables for each annual period, in our example will be estimated at approximately 232%[2], compared to 3.25% when using a fully funded traditional credit approach.

The foregoing illustrates how an investor can significantly improve its investment returns by using a disaggregated investment approach in which the investor provides solely investment support and outsources the capital requirement to a third party investor base. With this as an example, we can build on Benjamin Franklin's observation and conclude that

the preservation of capital and the reduction of the cash cost of an investment *without* a commensurate or parallel reduction in yield has the net effect of producing outsized returns that might otherwise be compared to leveraged returns, but without a corresponding introduction of traditional and disadvantageous leveraged risks.

> ***"… the longer the investment remains unfunded, the higher the rate of return garnered by the Enhancement Source …"***

A Brief Discussion of Risk

In general, the operation of an Investment Disaggregation does not introduce any significant additional risks to the Cash Source or Enhancement Source in a Tier 1 Investment. As we have established earlier in this paper, the investors acting as the Cash Source are insulated from the risk of the Tier 1 Investment to which their capital is applied. Therefore, the acceptability of the risk profile of the Tier 1 Investment to the Enhancement Source is the sole factor to be considered when initiating an Investment Disaggregation transaction.

As previously asserted, the investors comprising the Enhancement Source consist of those entities harboring a probabilistic expectation that the Tier 1 Investment to which they are taking exposure will be a success. Further, they understand and accept that their risk and return models are directly tied to the behavior of the Tier 1 Investment. If the Tier 1 Investment is successful, then the investors serving as the Enhancement Source at the Tier 2 level will also be successful. Likewise, if the Tier 1 Investment were to default on its obligations, capital servicing, or simply commercially fail, then, one will expect that the default triggers at the Tier 2 Investment level as such impact the Enhancement Source will also be activated. But, what are the default triggers that are embedded in the Investment Disaggregation model?

The singular manifestation of a Tier 1 Investment default directly impacting an investor as the Enhancement Source is the occurrence of a cash draw under the Guarantee that remains unreimbursed after some defined period of time. The primary and most likely circumstance giving rise to this situation would be the Tier 1 Investment operator's failure to meet its capital charges due to the Capital Source. It is in this event, which is the equivalent of a debt service failure in a conventional Single Source investment approach, that the undrawn Guarantee evidencing the full credit support of the Enhancement Source may be drawn.

The occurrence of an event of default resulting in the funding of the Guarantee has the net effect of merely reducing the defaulted disaggregated transaction to the status of a traditional Single Source investment transaction in which the Enhancement Source has now assumed the role as the Single Source Investor. Serving in this role would have been that investor's only prior option had it wanted to gain exposure to the subject Tier 1 Investment in a non-disaggregated or traditional investment structure. This said, it is important to note that in the event of a default causing an unreimbursed draw under the Guarantee, the investor will have enjoyed a distinct benefit from having initiated the investment within the context of an Investment Disaggregation.

Although we will not demonstrate this point mathematically here, an investor that initiates a Tier 1 Investment as the Enhancement Source — even an investment that ultimately defaults resulting in the full funding of the Guarantee — distinctly benefits from an enhanced rate of return as a result of a reduced capital basis in the investment during the pre-default period. In fact, provided a default does not occur in the first annual period of the Tier 1 Investment term, the investor will benefit from an upward trend in internal rate of return generated up to the date of effective default as constituted by an unreimbursed draw under the Guarantee. Thus, barring a default early in the life of a disaggregated investment, the longer the investment remains unfunded, the higher the rate of

[2] It is interesting to note in this example that in the event there were no third parties issuing the Guarantee, the IRR and return on cash would be infinite as there would be no distinguishable cash cost to the investment for as long as the Guarantee were to remain undrawn, which renders the calculation of an internal rate of return to the investor virtually impossible.

return garnered by the Enhancement Source as an enhancement to its Tier 3 Investment Portfolio. Following this default analysis through to its logical conclusion, after a default, the Enhancement Source will have suffered no greater consequence or endured no greater risks than would have otherwise been sustained had the transaction been engaged from the start under a Single Source investment approach.

"In looking forward to the scaled application and commercialization of ... Modern Investment Disaggregation, we believe that the advent of a new breed of global securities ... is inevitable and that the recombinant nature of these securities will increase agility, fungibility, resilience and overall efficiency in the long-term credit and investment marketplace."

Conclusion

This paper has presented an alternative hypothesis for the successful origination and efficient market absorption of virtually any investment opportunity, regardless of its particular characteristics, structure or risk profile. We have illustrated a new potential investment maxim with regard to the role of Investment Disaggregation as a tool for increasing the likelihood of successfully initiating a subject investment in place of the convention of Traditional Decisioning processes in the context of Single Source investment practices. We have detailed how the disaggregation of capital access from investment appetite at the point of posing an investment opportunity to the market community can increase the number of investor combinations possible to achieve a successful funding by bringing those two components back together from independent investor source groups. We have gone on to illustrate the economic benefits of applied Investment Disaggregation to the investment marketplace by fostering both a reliable and much-needed source of suitable cash equivalent investments and a new method for active commercial investors to gain access to investments ranging from conventional credit to private equity-like profiles with a significant reduction to the cash cost of making such investment. We have mathematically illustrated the economic impact of Investment Disaggregations as a new, standardized approach to the yield enhancement of a commercial investor's core portfolio. And, finally, we have proposed a solution that enables the investment community to consider longer term investment horizons without abandoning the security of more liquid, current income producing assets as a central part of its investment strategy.

In looking forward to the scaled application and commercialization of the thesis that is Modern Investment Disaggregation, we believe that the advent of a new breed of global securities that represents both core investment components is inevitable and that the recombinant nature of these securities will increase agility, fungibility, resilience and overall efficiency in the long-term credit and investment marketplace.

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