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Financial Innovation In Indian Capital Market

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Abstract:

Financial innovation has been one of the determinants of the growth of trade in financial services, notably the cross-border supply of these services. Consolidation through mergers and acquisitions particularly in the banking sector has boosted cross-border trade in financial services. Financial innovation is a continuous, dynamic process that entails the creation and subsequent popularization of new financial instruments, as well as new financial technologies, institutions, and markets. Financial innovation has experienced steady growth in the last decades and has arguably transformed the once relationship-focused financial intermediaries. With the advent of technology and deregulation of capital market there is a huge scope for bringing in innovative financial products in the Indian capital market. Indian capital market is largely characterized by the equity market with debt market and derivatives market lurking far-behind. This paper attempts to suggest a few of the innovative products that can be introduced in equity market (IDR, non-voting shares, debt and equity swaps), debt market (inflation linked bonds, junk bonds, specialized debt funds for infrastructure etc.), mutual funds and derivatives (carbon emission index and futures, weather derivatives, credit linked deposits, etc.). It also talks of the new pension scheme (NPS) as an innovative financial product meant for the Indian capital market. All these products or any other product, for that matter, would be beneficial only if it reduces cost, brings transparency and leads to optimal utilization of resources. Thus innovation is the call of the Indian markets but needs to be applied cautiously.

Key words: Indian Depository Receipts (IDR), junk bonds, New Pension Scheme (NPS), Weather Derivatives

1.Introduction

Financial innovation has come under significant scrutiny over the past years, and nobody can argue that certain financial innovations went badly wrong in the run up to the recent crisis. Nevertheless, "positive innovation" continues to be needed to address the challenges society will be facing in the future, finds Rethinking Financial Innovation, Reducing Negative Outcomes While Retaining the Benefits, a report by the World Economic Forum, written in collaboration with Oliver Wyman. The report explores the topic of innovation in the financial services industry and its effect on the wider economy.

The four key areas where 'positive innovation' can provide opportunity are: financing and growing the private economy; promoting inclusiveness; increasing efficiency, access and the customer experience; and rebalancing risk across sectors of the economy. Nevertheless, innovation, almost by definition, introduces uncertainty which gives rise to unintentional negative outcomes. Given the financial sector's relationship to the rest of the economy, it is vital that the likelihood of negative outcomes with widespread consequences is reduced. Yet, the dynamics of the sector and of innovations themselves make it impossible to reliably predict negative outcomes for individual innovations. However, enhancements to existing governance procedures, by adapting existing risk management mechanisms and other processes, can increase sensitivity to the specific contribution of innovation to uncertainty and risk. A major feature of this process has been the introduction of a wide variety of new products that trade in new market settings, thereby reducing the reliance upon banks for traditional credit instruments and credit evaluations. Many of these new products (e.g., Currency and interest rate swaps, currency and interest rate options) are of obvious assistance for risk management purposes-to enable the individual or firm to tailor the various dimensions of risk (e.g., Currency, maturity, credit, interest rate, default, and so forth) more precisely than before.

It is not an exaggeration to claim that these developments are having a profound impact on all aspects of the financial services industry.

2.The Indian Capital Market

A capital market is a place where both government and companies raise long term funds to trade securities on the bond and the stock market. It consists of both the primary market where new securities are issued among investors, and the secondary markets where already existent securities are traded. In the capital market, commodities, bonds, equities and other such investment funds are traded. There are 22 stock exchanges in India, first being the Bombay Stock Exchange (BSE), which began formal trading in 1875. Over the past few years, there has been a swift change in the Indian capital markets, especially in the secondary market. In terms of the number of companies and total market capitalization in share market, the Indian equity market is considered large relative to the country's stage of economic development.

3.Recent Development In Equity Market

- Free pricing- The abolition of office of the controller of capital issue resulted in the emergence of new era in primary markets. All controls on designing, pricing and tenure were abolished. The investors were given the freedom to price an instrument.
- Entry Norms- Hitherto no restrictions for a company to tap the capital markets. This resulted in a massive surge of small cap issues. The need for transparent free entry was felt by SEBI.
- Disclosures- The quality of disclosure of the offer document was really poor. A lot of vital adverse information was not disclosed. SEBI stringent disclosure norms were introduced.
- Book Building- It is the process of price discovery. One of the drawbacks of free pricing was price mechanism. The issue price has to be decided around 60-70 days before the opening at issue. Introduction to price building has overcome the limitation of the price mechanism.
- Streamlining the procedures- All the procedure was streamlined. Many aspects of the operations have been made transparent.

In respect of these developments there is a tremendous scope for the innovation in equity in Indian capital market.

4.Scope Of Further Equity Instruments

4.1.Indian Depository Receipts (IDR)

After the success of American Depository Receipts and Global Depository Receipts the Indian regulatory body, SEBI also allowed foreign companies to raise capital in India through INDIAN DEPOSITORY RECEIPTS (IDRs). IDRs can be understood as a mirror image of well-known ADRs/GDRs. In an IDR, foreign companies issue the shares to an Indian Depository, which would, issue Depository Receipts to investors in India. The Depository Receipts would be listed on Indian stock exchanges and would be freely transferable. The actual shares of the IDRs would be held by an Overseas Custodian, who shall authorize the Indian Depository to issue the IDRs. The Overseas Custodian must be a foreign bank having business in India and needs approval from the Finance Ministry for acting as a custodian while the Indian Depository needs to be registered with the SEBI.

Following rules were established by SEBI for listing through IDR:

4.1.1.Issuers Eligibility Criteria

- Must have an average; turnover of US\$ 500 million during the previous 3 financial years.
- Must have capital and free reserves which must aggregate to at least US\$100 million.
- Must be making a profit for the previous 5 years and must have declared a dividend of 10% in each such year.
- The pre issue debt-equity ratio must be not more than 2:1.
- Must be listed in its home country.
- Must not be prohibited by any regulatory body to issue securities
- Must have a good track record with compliance with securities market regulations.
- Must comply with any additional criteria set by SEBI

4.1.2.Reasons For Dormancy In Issue Of IDR

- Stringent rules set by SEBI made foreign companies stay away from Indian market.
- The rules were made more stringent after the Global economic crisis.
- Availability of easy funds in foreign markets.
- Rate of interest in foreign banks is also less which made them prime source of funds for companies.
- Uncertainty of subscription in Indian markets.

Indian companies have been highly active in foreign markets by raising funds through ADR and GDR but till date no foreign company has raised money through IDRs. Standard Chartered is the first company to allow its plan to issue IDR and has received the clearance from RBI also. The bank has yet to announce the size of the IDR issue, though the figures are expected to vary from Rs 2,500 to Rs 5,000 crore

4.2. Non - Voting Shares

A non- voting share is more or less similar to the ordinary equity shares except the voting rights. It is different from a preference share in the sense that in case of a possible winding up of the company, the preference shareholders get their shares of dividends repaid before the owners of the non-voting shareholders. The companies with the constant track record and a strong dividend history can issue these kinds of instruments. They are basically focused to small investors who are normally not interested in the management of the firm. Hence non promoting share are a good tool for the promoters of the company to increase the share capital without diluting the control. However if the company does not fulfill the commitment of higher dividend then these shares are automatically converted to shares with voting rights.

Hence it is very important for the companies to assess the characteristics of future cash flow and determine whether paying a higher rate of dividend is practicable for them or not.

4.3. Debt For Equity And Equity For Debt Swaps

A debt for equity swap is not an instrument but a situation where a company offers its shareholders and creditors debt in exchange for equity or stock. The value of the stock is determined on current market rates. The company may, however, offer a higher value to attract more shareholders and debt holders to participate in the swap. Equity for debt swap is the opposite of the above process. In this swap, the creditors to the company agree to exchange the debt for equity in the business.

4.3.1. Debt Market

Traditionally, the Indian capital markets are more synonymous with the equity markets - both on account of the common investors' preferences and the huge capital gains it offered - no matter what the risks involved are. On the other hand, the investor's preference for debt market has been relatively a recent phenomenon - an outcome of the shift in the economic policy, whereby the market forces have been accorded a greater leeway in influencing the resource allocation. If we talk about the Indian debt market bond market has formed its own place in the financial systems. All the recent developments are accrued to bonds market in India.

4.3.2. Size Of Debt Market

If we look at worldwide scenario, debt markets are three to four times larger than equity markets. However, the debt market in India is very small in comparison to the equity market. This is because the domestic debt market has been deregulated and liberalized only recently and is at a relatively nascent stage of development.

5. Scope Of Innovations In Bond Market

5.1. Inflation Linked Bonds (ILB)

The recent Monetary Policy released by RBI laid its thrust on controlling the spiraling inflation, especially the food price inflation. One of the reasons behind the CRR hike was to "curtail the rising inflationary expectations (higher expected price trends)"

In the past RBI has been concerned about the fact that a common man does not have any protection against rising prices, vis No Inflation Hedge. The common man has to rely on traditional but inefficient methods to hedge the real inflation risks, such as Gold and real assets such as commodities or real estate or even excessive stocking of goods

In developed markets like US, the government has issues "Treasury Inflation Protected Securities" known as TIPS. Globally more than USD 1 trillion worth inflation linked bonds must be outstanding.

Inflation linked bonds (ILB) securities give an opportunity to market participants and investors to hedge against inflation. The coupon (interest rate) of ILB is fixed but the underlying principal would move in tandem with the inflation levels in the country. At redemption of the securities the higher of the value (adding inflation) thus arrived or face value is paid off. Banks and Financial Institutions usually buy wholesale and create retail market for such securities. With right access retail investor can easily buy such securities to protect himself from inflation and this could have following advantage to investors and the government.

- The inflation linked bonds can make the governments accountable for higher inflation since the cost of borrowings will be linked to inflation (if coupon paid is inflation hedged). Rising inflation will also raise the repayment of inflation linked bonds.
- It will help government to broaden the investor base by offering inflation linked bonds at the retail level, where the participation now is minimal.
- Government can diversify the debt service costs in a deflationary (falling prices) scenario.
- It is very likely that the existence of inflation linked bonds might reduce the inflation risk premium embedded in government bonds.
- For the inflation linked bonds to be an effective hedge GOI should ensure that the underlying inflation index is representative of real or actual inflation on the streets.
- RBI can precisely quantify & control the inflationary expectations embedded in the economy as well as in the markets. RBI can use inferences from trading in such bonds in formulating its monetary policy stance
- The onus on monetary policy tools such as interest rates, to contain inflation will reduce if RBI can guide or influence the inflationary expectations through the demand/supply of inflation linked bonds and with an excellent communication policy.

For Investors in general, inflation linked bonds would provide distinct advantages:

- It allows investors to hedge the purchasing power (inflation) risk. The capital is inflation risk protected and the income (coupon) can be structured that way too.
- Inflation linked bonds universally are regarded as a separate asset class & would provide diversification benefits to a portfolio due to its negative co relation with returns from traditional asset classes.
- Such bonds provide positive risk reward relationship too.
- Inflation linked bonds are effective vehicle for hedging risks for institutional investors, where the long term liabilities are inflation linked or linked to future wage levels or banks who face the inflation risk on their assets side due to their GOI Bond holdings.
- Access of FIIs to the inflation linked bonds can allow them to hedge their inflation risks in India which are currently expressed in the currency markets. The USD/INR (currency) volatility can hence come down hence.

5.2. Junk Bonds

Sharp movements in the Indian equity market may be par for the course. But when it comes to the market for corporate bonds, it's constantly stagnant. The reason is, we don't have a corporate bond market. But this is overwhelmingly dominated by government securities (about 80% of the total). Of the remaining, close to 80% again comprises privately placed debt of public financial institutions. An efficient bond market helps corporate reduce their financing costs. It enables companies to borrow directly from investors, bypassing the major intermediary role of a commercial bank. One of the important instruments in corporate market is Junk Bonds which could be great source of financing for countries like India where markets are not much regulated.

A speculative bond rated BB or below, "Junk bonds" are generally issued by corporations of questionable financial strength or without proven track records. They tend to be more volatile and higher yielding than bonds with superior quality ratings. "Junk bond funds" emphasize diversified investments in these low-rated, high-yielding debt issues. Thus, these are high-yielding, high-risk securities issued by companies with less robust finances.

5.2.1. Need For Junk Bonds In India

The major issue amongst Indian bond markets has been how companies with poorer ratings can raise funds. At times the banks and FIs are reluctant to invest in even the 'AAA-rated' companies. In fact for progress of a developing nation like India, this would give a wonderful opportunity for the smaller companies to get funds and implement their ideas. However, a proper regulatory mechanism also needs to be set-up to avoid high risk of default in the case of junk bonds.

Currently, there are only two instruments that FIIs can invest in India, i.e., equity and debt. The cap on FII debt investment varies from time to time between \$1.5 billion and \$2 billion. The Asset Reconstruction Company of India Ltd. (ARCIL), India's first asset reconstruction company, has vied for permitting FIIs to invest in a new instrument in India - distressed assets. ARCIL has recommended SEBI, RBI and the Finance Ministry to allow FII investment in a new category, which is neither equity nor debt but a separate lucrative instrument - security receipts with underlying distressed assets.

5.2.2. Proposed Junk Bond Market In India - Scenario (Optimistic & Realistic)

An optimistic scenario would be having junk bonds in the market ideally for funding by FIIs and Institutions for financing the small Indian companies. However, considering the risk associated with these bonds it might not be possible in near future because economy is still in its nascent phase and on a fast development track. So any move which is risky and can affect future inflows of foreign funds and investor confidence would not be ideal.

The only way an investor should invest in junk bonds is by diversifying. A selection of at least half a dozen issues will afford the investor some protection. High risk is inherent in high yield bonds. Nevertheless, your portfolio may well have a place for some of these securities if you are not risk-averse. By having junk bond markets, it would in fact signify deepening and maturing of Indian debt markets. In India, companies are hamstrung by the fact that investment relaxations may come in only when the debt markets get deeper, so that insurance companies can increase their portfolio yield without exposing themselves to risk for long tenures by investing in junk bonds.

5.2.3. Impact Of Junk Bonds On Indian Economy

A well-functioning corporate bond market allows firms to tailor their assets and liability profiles. If companies fear they will not be able to raise long-term resources, they are likely to stay away from long-term investments or entrepreneurial ventures that have a long-term payoff. In the long run, this can affect economic growth. The corporate bond and the junk bond market could fill this vacuum. In the absence of a corporate bond market, a large part of debt funding comes from banks. In the process, banks assume a significant amount of risk due to maturity mismatch between short-term deposits that can be readily withdrawn and relatively long-term illiquid loan assets resulting in high NPAs.

An active and efficient bond market gives companies an alternative means of raising debt capital in the event of a credit crunch. It also leads to better pricing of credit risk (since expectations of all market participants are incorporated into bond prices).

FIIs are major players in the equities market. However, thanks to the ceiling on their investment in the debt market (currently, there is a cumulative sub-ceiling of \$0.5 bn on investment in corporate debt), they are present only in a limited way in the bond market.

Pension funds and the insurance sector could be another constituency, but the absence of pension funds and low insurance penetration has meant limited demand for long-term bonds. All these would help in establishing a corporate bond market for sub-investment grade.

5.3.Specialized Debt Funds For Infrastructure Financing

As recommended by the High Level Expert Committee on Corporate Bonds and Securitization (HLECCBS), there is a case for creation of specialized Debt Funds to cater to the needs of the infrastructure sector. Such Debt Funds registered with SEBI should be given the same tax treatment as the one extended to venture capital funds.

The resource requirements for infrastructure development in India are enormous. An estimate indicates that the requirements are to the tune of US\$ 150 billion or more during the next five years. Considering the long gestation period involved in infrastructure projects and given their liabilities (mainly deposits) which are short to medium term in nature, banks are constrained to finance this sector since their asset liability side is short term in nature. This certainly requires bond financing.

There exists a strong case for creation of specialized long term Debt Funds to cater to the needs of the infrastructure sector. A regulatory and tax environment that is suitable for attracting investments from Qualified Investment Banks is the key for channeling long term capital into infrastructure development. Currently, most banks lack in-house capacity to evaluate project finance risk. As such, they provide debt financing for infrastructure projects largely only to the extent that they are able to participate in loan syndicates led by a handful of specialists.

Facilitating the creation of infrastructure focused Debt Funds and making it easier for banks to participate in such funds would allow much larger volumes of debt financing from the banks to be deployed to infrastructure development while distributing the associated risks more evenly across a greater variety of projects.

5.4.Securitization Of Debt

Securitization is a structured finance process that distributes risk by aggregating debt instruments in a pool, then issues new securities backed by the pool. The term "Securitisation" is derived from the fact that the form of financial instruments used to obtain funds from the investors are securities. As a portfolio risk backed by amortizing cash flows - and unlike general corporate debt - the credit quality of securitized debt is non-stationary due to changes in volatility that are time- and structure-dependent. If the transaction is properly structured and the pool performs as expected, the credit risk of all tranches of structured debt improves; if improperly structured, the affected tranches will experience dramatic credit deterioration and loss. All assets can be securitized so long as they are associated with cash flow. Hence, the securities which are the outcome of Securitisation processes are termed asset-backed securities(ABS). From this perspective, Securitisation could also be defined as a financial process leading to an issue of an ABS.

A very basic example would be as follows. XYZ Bank loans 10 people \$100,000 a piece, which they will use to buy homes. XYZ has invested in the success and/or failure of those 10 home buyers- if the buyers make their payments and pay off the loans, XYZ makes a profit. Looking at it another way, XYZ has taken the risk that some borrowers won't repay the loan. In exchange for taking that risk, the borrowers pay XYZ a premium in addition to the interest on the money they borrow. XYZ will then take these ten loans, and put them in a pool. They will sell this pool to a larger investor, ABC. ABC will then split this pool (which consists of high risk loans and low risk loans) into equal pieces. The pieces will then be sold to other smaller investors, (as bonds).

5.5.Mortgage Backed Securities (MBS)

A type of asset-backed security that is secured by a mortgage or collection of mortgages. These securities must also be grouped in one of the top two ratings as determined by a accredited credit rating agency, and usually pay periodic payments that are similar to coupon payments. Furthermore, the mortgage must have originated from a regulated and authorized financial institution. When you invest in a mortgage-backed security you are essentially lending money to a home buyer or business. An MBS is a way for a smaller regional bank to lend mortgages to its customers without having to worry about whether the customers have the assets to cover the loan. Instead, the bank acts as a middleman between the home buyer and the investment markets.

This type of security is also commonly used to redirect the interest and principal payments from the pool of mortgages to shareholders. These payments can be further broken down into different classes of securities, depending on the riskiness of different mortgages as they areclassified under the MBS.

However, the long-term tenure of MBS and the lack of liquidity in the secondary market discourage investors from getting actively involved in the market. Also home loans in India get pre-paid or re-priced, thus exposing the structures to significant interest rate risk and leading to higher credit enhancement requirements.

5.6.Pension Funds And Retirement Schemes

International experience shows that pension funds have indeed provided the much-needed boost to the development of corporate debt markets both in terms of demand for corporate bonds as also liquidity apart from improving the market microstructure. Pension funds have also been major stimulators of financial innovation as they have directly or indirectly supported product innovation by supporting the development of asset backed securities, structured finance, derivative products and so on. Pension fund presence in the bond market is likely to increase the availability of long term funds in the market, which in turn will improve the asset liability mismatch that often arises in projects with long gestation periods.

5.6.1.Recent Government Initiatives And Pension Fund Reform

Two parallel sets of initiatives have been taken during the last 4-5 years. The first initiative was for the organized sector and the second initiative was for the unorganized sector. OASIS (Old Age Social and Income Security) project was commissioned by the Ministry of Social Justice and Empowerment, which submitted its report in January 2000. OASIS report recommended a scheme based on Individual Retirement Accounts (IRAs) to be opened anywhere in India. Banks, Post Offices etc., were identified to serve as "Points of Presence" (POPs) where the accounts could be opened or contributions deposited. Their electronic interconnectivity would ensure "portability" as the worker moves from one place/employment to another. There would be a depository for Centralized record keeping, fund managers to manage the funds and annuity providers to provide the benefit after the age of 60. The OASIS report brought forth important reforms in the field of pension fund investments and paved the way for later initiatives like the announcement of the New Pension System in the Budget of 2003-04, which got introduced on 1 January 2007.

6.Scope Of Development

6.1.The New Pension System (NPS)

The New Pension System (NPS) is a pension system that is intended to initially cater to newly recruited Central Government employees (except the armed forces) and to workers in the unorganized sector. Even within unorganized sector, the NPS will cater to only workers who are taxpayers and can be motivated to join the scheme through tax incentives. As with Government employees, they can ask for investment protection guarantees on investments under various pension schemes offered by Pension Funds. However, this guarantee would be implemented using private financial markets. Persons being covered by schemes offered by the EPFO and other provisions administered under any statutes would not be covered under this NPS scheme. Thus, no existing arrangement of pension provision applicable to already existing persons are proposed to be changed, only new/additional persons are going to avail the benefit of the NPS. Although the NPS has started with covering Central Government employees who joined service after 1 January 2007, State Governments are likely to join this NPS scheme going forward. In due course, private sector employees too may join the NPS scheme.

The uniqueness of the NPS is two-fold:

- It creates a system where both the Government employees as well as workers in the unorganized sector are covered by one scheme and supervised by one regulator and
- The choice about fund managers or about different schemes of a fund manager can be exercised independent of the fund manager through the mechanism of the Central Record-keeping Agency (CRA).

7.Mutual Funds

Mutual funds are supposed to be the best mode of investment in the capital market since they are very cost beneficial and simple, and do not require an investor to figure out which securities to invest into. A mutual fund could simply be described as a financial medium used by a group of investors to increase their money with a predetermined investment.

The responsibility for investing the pooled money into specific investment channels lies with the fund manager of said mutual fund. Therefore investment in a mutual fund means that the investor has bought the shares of the mutual fund and has become a shareholder of that fund. Diversification of investment Investors are able to purchase securities with much lower trading costs by pooling money together in a mutual fund rather than try to do it on their own. However the biggest advantage that mutual funds offer is diversification which allows the investor to spread out his money across a wide spectrum of investments. Therefore when one investment is not doing well, another may be doing taking off, thereby balancing the risk to profit ratio and considerably covering the overall investment.

The best form of diversification is to invest in multiple securities rather than in just one security. Mutual funds are set up with the precise objective of investing in multiple securities that can run into hundreds. It could take weeks for an investor to investigate on this kind of scale, but with investment in mutual funds all this could be done in a matter of hours.

8.Scope Of Innovation In Mutual Funds

8.1.Investing In International Markets

In 2007 RBI increased the limits of international investments for individuals from \$50,000 to \$100,000 and for Mutual funds from 3 billion to 4 billion dollars. This has made a lot of mutual funds have offered product to Indian customers that invest abroad. Performance of some of those products is:

Though some of these funds give better returns than normal domestic equity and provide better diversification but still people are reluctant in investing abroad due to following reasons:

8.1.1.Change In Exchange Rates

When the exchange rate between the foreign currency of an international investment and the Indian Rupee changes, it can increase or reduce your investment return. Due to this reason it gets more complicated and risky for people not only their investment should be in right stock/fund the foreign exchange rate should also work in their favor

8.1.2. Political Social And Economic Events

It is difficult for investors to understand all the political, social and economic factors that influence foreign markets. These factors provide diversification, but they also contribute to the risk of international investing.

8.1.3. Cost Of Investment

International investing can be more expensive than investing in Indian companies. In smaller markets, you may have to pay a premium to purchase shares of some popular companies. Transaction costs such as fees, broker's commissions, and taxes often are higher than in Indian markets. Mutual funds that invest abroad often have higher fees and expenses than funds that invest in Indian stocks, in part because of the extra expense of trading in foreign markets.

8.1.4. Reliance On Foreign Legal Remedies

If you have a problem with your investment, you may not be able to sue the company in India. You may have to rely on whatever legal remedies are available in the company's home country.

9. Derivatives In India

The National Stock Exchange of India Limited (NSE) commenced trading in derivatives with the launch of index futures on June 12, 2000. The futures contracts are based on the popular benchmark S&P CNX Nifty Index. The Exchange introduced trading in Index Options (also based on Nifty) on June 4, 2001. NSE also became the first exchange to launch trading in options on individual securities from July 2, 2001. Futures on individual securities were introduced on November 9, 2001. Futures and Options on individual securities are available on 179 securities stipulated by SEBI.

10. Scope Of Innovation In Futures Market

10.1. Economy Growth Futures

This is a unique type of futures contract that can be raised in India as in this there should be an index which measures the economy growth and futures can be predicted on the underlying growth. In this there should be a hypothetical index created on the basis of growth of an economy. It can be measured on the growth 3, 6, 9, 12 months. Every quarter the growth can be measured and compared with future contract. Based on the conditions prevailing in the economy and also the world scenario should be predicted and accordingly the moment of the future contract can be decided.

10.2. Carbon Emission Index And Futures

We all know one issue that is troubling the whole world is global warming and climatic changes. The adverse effects of global warming on the Indian subcontinent vary from low-lying islands and coastal lands to the melting of glaciers in the Himalayas, threatening the huge flow rate of many of the most important rivers of India and South Asia. In India, such effects are projected to impact billions of lives. As a result of increased carbon emissions, the climate of India has become increasingly volatile over the past several decades; this trend is expected to continue. Another consideration in this aspect is every country doesn't want to take responsibility for contributing to Global Warming. One of the steps in this context is forming an Index for Carbon Emission which measures the carbon emission of each country based on the preset parameters. Now on that index there can be Future contract which can just book the level of index based on which the premium and all should be decided.

An interesting fact to notice here is that the value of contract will be directly measured by the central authority formed for this purpose. Another important guideline for measuring the emission is Industrial Production Index (IPI).

10.3. Weather Derivatives

A weather derivative contract may be termed as a financial weather dependent contract whose payoff will be determined by future weather events. The settlement value of these weather events associated with a particular instrument is determined from a weather index, expressed as values of a weather variable measured at a stated location at a particular time. These derivatives are financial instruments that can be used by organizations or individuals to reduce the risk associated with adverse or unexpected weather outcomes. The difference from other derivatives is that the associated asset (rain/temperature/snow) has no direct value to price the weather derivative. Weather Derivatives can be an important tool to hedge against losses occurring from uncertain weather conditions and can help reduce the impact of adverse weather on a company's profitability.

10.3.1. Weather Derivatives In India

India is a country where still agriculture is the major source of income for majority of the population. Agriculture and the related industries support around 60% of Indian population. According to the economic survey agriculture contributes more than 25% of the total GDP of India. But the Indian agriculture performance is still dependent heavily on the south west monsoons. Every year a lot of crops get destroyed because of floods or draught. But it still doesn't have an efficient irrigation system to support its farmers. The south west monsoon is very important to the agriculture performance of India. Hence Weather Derivatives have a good scope and it is most likely that weather derivatives in India should have the monsoon or rainfall as their underlying.

Weather instrument trading in India has a long way to go. Until and unless the regulatory bodies allow trading on intangibles such as rain in financial markets, weather trading will be a dream. Even if the bill is passed and weather instruments are traded on the exchange a very strong infrastructure is required so as to have a far reaching effect. Farmers from each and every part of the country should be able to hedge of their risks. This can be done with proper programs through the local Gram Panchayats and e-choupals. Farmers and traders should be given exposure and educated properly about the benefits of weather trading.

.In India ABN Amro Bank is exploring sales of weather derivatives and catastrophe bonds for the first time. The bank is talking to different companies in the beverage and cement sectors, to airlines and oil majors to get them interested in the product.

10.4.The Credit Default Swaps (CDS)

CDS have grown rapidly in the credit risk market since their introduction in the early 1990s. It is believed that current usage is but a small fraction of what it will ultimately represent in the credit risk markets. In particular, the CDS market will become as central to the management of credit risk as the interest rate swap market is to the management of market risk.

10.5.The Credit-Linked Note (CLN)

CLN market is one of the fastest growing areas in the credit derivatives sector. It is, a combination of a regular note (bond or deposit) and a credit-option. Since it is a regular note with coupon, maturity and redemption, it is an on-balance sheet equivalent of a credit default swap. Under this structure, the coupon or price of the note is linked to the performance of a reference asset. It offers borrowers a hedge against credit risk and investors a higher yield for buying a credit exposure synthetically rather than buying it in the publicly traded debt.

10.6.Credit Linked Deposits (CLDs)

CLD are structured deposits with embedded default swaps. Conceptually they can be thought of as deposits along with a default swap that the investor sells to the deposit taker. The default contingency can be based on a variety of underlying assets, including a specific corporate loan or security, a portfolio of loans or securities or sovereign debt instruments, or even a portfolio of contracts which give rise to credit exposure. If necessary, the structure can include an interest rate or foreign exchange swap to create cash flows required by investor.

10.7.Collateralized Debt Obligations (CDOs)

CDOs are specialized repackaged offerings that typically involve a large portfolio of credits. Both involve issuance of debt by a SPV based on collateral of underlying credit(s). The essential difference between a repackaging programme and a CDO is that while a simple repackaging usually delivers the entire risk inherent in the underlying collateral (securities and derivatives) to the investor, a CDO involves a horizontal splitting of that risk and categorizing investors into senior class debt, mezzanine classes and a junior debt. CDO may be subject to local debt registration / regulatory requirements.

11.Conclusion

Financial innovation is truly welfare enhancing if it brings about a reduction in the cost of capital and improvement in the financial intermediation process without a commensurate increase in financial risk. The benefits of emerging capital markets can be measured in terms of factors such as lower pricing , reduced cost of capital, mitigated risk exposures, broader access to capital and increased liquidity. Financial innovation ought to make the movement of capital more efficient, risk management more targeted, hedging better matched, and trading less costly. Financial innovation also ought to contribute to better management and transfer of credit risk, the unbundling and trenching of risk, improved liquidity, more optimal portfolio diversification, and broadened credit risk dispersion.

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