



# **A Primer: New Financial Instruments**

## **Background Reading on Long-Term, Fixed-Income Securities**

**The Egypt Capital Markets Development Project**



CHEMONICS INTERNATIONAL INC.



**April 1999**  
**USAID Contract No. 263-C-00-98-00067-00**  
**USAID/Egypt**

## **TABLE OF CONTENTS**

---

A. Introduction	1
B. Preferred Stocks	2
C. Bonds: Corporate Debt Securities	4
C1. Convertible Bonds	
C2. Zero-Coupon Bonds	
C3. Bonds with Warrants	
C4. Some Common Bond Terms	
Appendix A: Bibliography and Further Reading	

## **NEW FINANCIAL INSTRUMENTS: LONG-TERM, FIXED-INCOME SECURITIES**

---

### **A. Introduction**

Corporations issue fixed-income securities, mainly bonds, as a method of long-term borrowing from investors to finance projects that will generate revenues in future years. By issuing a bond, the corporation unconditionally promises to repay its face value upon maturity, in addition to paying annual interest, as agreed, to the bondholders. Therefore, compared to stocks, bonds are relatively less risky for investors.

Fixed-income securities provide investors with two kinds of return on their investment—current income and, in many cases, capital gains.

For those investors seeking current income as a way of supplementing their sources of income, fixed-income securities can provide regularly scheduled payments. Because of the generally high quality of many fixed-income securities, they can also be used, when interest payments are reinvested, for the preservation and long-term accumulation of capital. In addition, fixed-income securities can satisfy the objectives of those seeking capital gains through aggressive trading, however, with greater risk.

At present, fixed-income instruments such as bonds constitute minimal trading activities and low issuance volume in the Egyptian market. This is contrary to all international markets, where trading in fixed-income securities constitutes approximately 70% of total trading.

This paper presents new fixed-income financial instruments that, if introduced, would broaden the range of financial products available in the Egyptian market and provide new options for corporations to obtain financing for working capital and investment purposes. To this end, this report examines various instruments to determine what is appropriate for the Egyptian market. The fixed-income instruments examined by this paper are:

- Preferred stocks
- Convertible bonds
- Zero-coupon bonds
- Bonds with Warrants

## **B. Preferred Stocks**

Preferred stock is an equity security that combines the ownership characteristics of common stock with the stated return characteristic of bonds. While the dividend on common stock may fluctuate, that on preferred stock remains fixed. Bonds carry a fixed return as debt securities, and the principal will be paid back to the investor at a specified maturity date when the bonds are retired. On the contrary, preferred stock, as an equity security, is a permanent form of capitalization and has no maturity date.

Preferred stock has been overlooked as a capital-raising alternative by corporations. While technically a form of equity, preferred stock actually possesses many of the characteristics of a fixed-income security.

Preferred stock can be an important part of a diversified portfolio, and investors must understand the characteristics of these securities as well as the factors which may impact their value. Preferred stock may be appropriate for those investors looking for higher yielding equity-like alternatives, as preferred securities can offer appealing yields, as well as investment grade credit quality, making them appropriate for a portion of any investment portfolio. On the other hand, preferred stock is a popular method of preserving voting control for the majority-interest shareholders in any corporation when raising investment capital.

The superiority of preferred over common stock rests in two areas—dividends and liquidation rights. Preferred shareholders must receive the stated rate prior to the distribution of dividends on common stock. Also, if a corporation is placed in liquidation, the preferred shareholders have a claim on the remaining assets ahead of common stockholders, but after bondholders. Preferred stock is, thus, akin to a junior bond without the basic protection of a bond issue, but also without the appeal of common stock, namely the ability to participate in the growth of a successful enterprise. If the preferred stock is of good quality, it gives the opportunity for generous dividend returns with no opportunity for growth. Price appreciation is indeed possible, but such growth would normally be caused by falling interest rates, not increased earnings. Like bonds, standard preferred share prices move inversely to interest rates.

Preferred stock enjoys the potential for real growth if the shares are convertible into common stock, or if they possess one of the rare participating features that allow for increased dividends to reflect increases in the rate paid on the common stock.

### ***Priority of Claims***

It should be noted that the various classes of securities form a hierarchy with respect to claims on interest or dividend payments and, in cases of liquidation, on corporate assets. This hierarchy moves downward from bonds to preferred stock to common stock.

### ***Par Value***

Like common shares, preferred shares must also be authorized and their par value established in the corporate charter. However, the par value of a preferred stock is important because it is the figure on which the dividend is calculated, usually as a percentage of the par value. The dividend on preferred stock must be paid before the directors of a corporation may pay a dividend to common stockholders.

**No Voting Rights**

Preferred stockholders usually have no voting rights. A provision in the corporate charter, however, may grant voting rights to preferred stockholders if omissions of dividend payments have been prolonged.

**Adjustable-Rate Preferred Stock**

An adjustable-rate preferred stock is similar in nature to a floating-rate debt instruments. This preferred stock features a dividend whose rate is periodically revised according to some formula. The adjustment might be based on a measure like the Treasury bill rate, in which case the dividend might be set at something like 1% over the T-bill rate for a certain period, or on a certain date.

**Kinds of Preferred Stock**

Aside from the general features of preferred stock mentioned above, many special features could be added to various issues of preferred stock to improve their marketability to investors. The four major types of preferred stock resulting from these added features are:

- prior or preference preferred
- participating preferred
- cumulative preferred
- convertible preferred

*Prior preferred.* Prior preferred stock has a prior claim on dividends over any subsequent issues of preferred stock. This is called a *prior dividend provision*. The expression *preference stock* is often used as synonym for prior preferred.

*Participating preferred.* The *participating dividend provision* entitles preferred stockholders to receive the stated dividend and additional specified dividends, if common stock dividends exceed a certain amount. This provision is motivated by the desire to prevent ownership of the common stock from becoming more attractive than that of the preferred on the basis of yield. Thus, it is provided that the dividend on the common cannot be raised above a certain point without a corresponding rise in the dividend on the preferred.

*Cumulative preferred.* Cumulative preferred stock (a large percentage of outstanding preferred issues in the international market) carries a *cumulative dividend provision* according to which no dividends may be paid to common stockholders if preferred stock dividends are in arrears—that is, they have not been fully paid to date. This provision gives preferred stockholders a better assurance of dividend income.

If corporate earnings for a year fail to cover the cumulative preferred dividend, then in the next year, if possible, dividends must be paid both for the previous lost year and the current year—and so on, until all arrears are paid.

*Convertible preferred.* The *convertible provision* allows preferred stock to be converted into (i.e., exchanged for) a designated number of common shares. This is by far the most important of the special features of preferred shares. Ordinary preferred stock has little intrinsic growth potential because it is a fixed income security. The convertible provision can make the preferred issue attractive to some-investors who are investing both for dependable income and growth potential. If the value of the common stock approaches that of the convertible preferred, any further

advances in the price of the common stock will tend to be reflected in an advance in the price of the convertible preferred stock.

These features may be combined. Thus, a preferred issue could be prior and *convertible*, or *cumulative and convertible*.

### **C. Bonds: Corporate Debt Securities**

Corporate debt securities—bonds, notes, etc.—are certificates of debt stating the corporation's commitment to repay to the purchaser a specified amount of money on a specified date. This specified amount of money is called the *face value* of the security. Debt securities also carry a promise to pay a specified periodic interest rate in return for the use of the borrowed funds. If the debt securities are backed by physical assets, they are said to be secured. Unsecured debt securities, on the other hand, are backed solely by the reputation, credit record, and earning power of the borrower. This report will concentrate on corporate debt securities that are issued for periods of one year or more.

Corporations issue bonds to borrow long-term funds. Bonds are issued to finance projects that will generate revenue in future years. By issuing a bond, the corporation unconditionally promises to repay its face value upon maturity plus annual interest as agreed.

All corporate debt securities may be called bonds, but in practice, the tendency is to use the term *note* for shorter-term bonds. Notes are usually unsecured debt securities. Both bonds and notes are characterized by a legal agreement that specifies the obligations of the issuing corporation and the privileges and protections afforded the investor.

#### ***Bond Format***

Corporate bonds can be issued in *bearer form*. This means the bond certificate does not have the name of the owner inscribed on it; therefore, the issuer has no current record of who owns the bond and, thus, to whom to pay the interest. To provide for interest payments, the bond certificate has a series of coupons attached to it which are dated every six months (from six months after issue date until maturity date). These are detached by the owner and presented, usually through his own bank, for interest payment. For this reason, they are often called coupon bonds.

Bearer form clearly facilitates the transfer of possession since the seller simply gives the certificate to the buyer. If done through a broker, the broker will attach a delivery ticket with the name of the purchaser and the certificate numbers.

*Registered form* means registered both as to principal and as to interest. Thus, the owner's name is inscribed on the certificate, and the interest is paid by submitting the semi-annual coupon attached to the certificate.

#### ***Secured and Unsecured Bonds***

Corporate bonds are either *secured* or *unsecured*. Secured means that some asset is pledged as collateral to assure that both interest and principal will be paid by the borrower. If the bond is secured, title to the asset should be placed in the hands of a trustee who may, if there is a default, use the resale value of the asset to pay off the debt. Technically, this is a lien or claim on the asset.

Unsecured means that no such collateral is pledged. Instead, the issuer pledges the good faith, credit rating, and income-producing ability of the corporation to the payment of the interest and principal.

In many instances, corporations that are capital intensive—that is, who invest relatively large amounts of money in plant, equipment, property, etc—tend to issue secured bonds. Corporations that are labor-intensive—that is, whose greatest cost of doing business is salaries and who may be relatively poor in plant and equipment—tend to issue unsecured bonds.

The principal types of secured bonds are mortgage bonds, equipment trust certificates, and collateral trust bonds. Unsecured bonds are usually called debentures.

### ***Risks and Rewards of Bonds***

With an investment in a bond or bond fund, return comes in two forms: income return (yield) and capital return. Each type of return can vary significantly, and together, they form the bond's *total return*.

*Income return.* Income return is a bond's interest income expressed as a percentage of its purchase price. A bond's income return or yield is determined primarily by two factors: credit quality and maturity.

*Credit quality.* Credit quality assessments are made by independent agencies and are denoted by a letter rating. Bond holders generally earn higher yields from lower-quality bonds, as lower-quality bonds have higher risk, for which an investor should be rewarded. Government bonds, which carry the highest credit ratings, thus the lowest risk of default, offer the lowest yields. Investment-grade bonds provide somewhat higher yields. Non-investment-grade bonds, often called “high-yield” or “junk” bonds, provide the highest levels of income, and correspondingly, the greatest potential for default.

*Maturity.* The maturity of a bond is set by its issuer and is expressed in days or years. For bonds of similar credit quality, the investor will generally earn a higher yield from the bond with a longer maturity.

*Capital return.* Capital return is a measure of the appreciation or depreciation (gain or loss) in a bond's market price. For instance, if an LE1,000 bond declines in price to LE980, the capital return would be minus 2 percent. Capital return is chiefly determined by changes in interest rates. As a general rule, bond prices move inversely with interest rates. When interest rates go up, bond prices go down; and when interest rates go down, bond prices go up. Moreover, longer-maturity bonds experience greater price changes than bonds with shorter maturities in response to changes in interest rates.

*Total return.* A bond's total return is calculated based on the sum of income return plus capital return.

Before investing in a bond or bond fund, the following risks should be assessed:

- *Interest rate risk.* The degree to which the bond or bond fund's price might fluctuate as a result of changes in interest rates. Bonds (or bond funds) with longer maturities generally offer higher yields, but also have the potential for greater price swings than those with shorter maturities.

- *Credit Risk.* The chance a bond will default (fail to make payment of principal and interest). Lower-quality bonds generally offer higher yields but also have a greater risk of default.

### **C1. Convertible Bonds**

Convertible bonds constitute an important part of a market's financial repertoire. In developed markets, approximately one bond issue out of eight is convertible.

A *convertible bond* is a debt obligation that pays a fixed interest rate like a bond, but can be converted into common stock in the issuing company. Convertibles are attractive because they pay interest and offer potential capital appreciation. When the equity market goes down, convertible bonds can be a haven. Their yield helps shield the investor against moderate declines, and in the meantime, they still give him or her a chance to make profits when share prices rise.

Convertible bonds usually yield a lower rate of return than the prevailing market interest rates, but in return, they give the bondholder the option to convert the bonds into equity after a certain period of time. At the time of the issue, it is decided how many shares of common stock the bondholder can receive for his bond when it is exchanged. The exchange is usually made through a large bank called the redemption agent.

In debt restructuring of a company, convertible bonds can achieve a moderate reduction in current interest costs. In return, the company shares its future prospects with creditors in order to bridge a temporary cash-flow shortfall.

Because convertible bonds have something extra, the right to convert to common stock, they usually carry a slightly lower interest rate. If the stock rises, the bond price will also rise. Since most convertible bonds are also *callable*, the company can force the bond holders to convert the bonds to common stock by calling the bonds. This is known as "forced conversion." When a bond is converted to common stock, the corporate debt is reduced. What was formerly debt has now been converted to equity. The company did not get any larger with the additional stock, but each stockholder's piece of the pie got smaller. If the company's stock declines to a price which makes the convertible feature of the bond worthless, and as long as the company is solvent, the bond will trade based on its yield—like any other bond. As long as the company can pay its interest and the principal upon maturity, there is a price level to which a bond will fall and fall no further.

*Parity* refers to the relationship between a convertible bond and the company's stock. If a LE1,000 bond is convertible into 50 shares of stock, the parity of the stock is LE20. If the stock moves up in the market to LE25, the bonds would have to be trading at LE1,250.

Many corporate debentures have conversion features. Convertible bonds may be exchanged, at the option of the owner, for common stock in the same company in accordance with the terms of the issue. In some instances, convertible bonds offer conversion to preferred stock rather than common stock.

The bond is convertible at the option of the bondholder, so it is usually up to the issuer to make it advantageous for the bondholder to convert. The issuer can do this in two ways:

1. Increase the dividend on the common stock so that it is to the bondholder's advantage to convert.
2. The issuer can "force" the conversion by calling the bonds at a price lower than their market value. In this case, it is advantageous to the bondholder to convert.

Securities are made convertible as a sweetener to make the issue more marketable. It follows that if the issue is more marketable, the issuer can sell it with a lower rate of interest. Keeping the interest rate as low as possible is extremely important to an issuer. Interest is a recurring cost, and the ability to sell an issue with a one percent lower interest rate on a ten-year issue saves, in effect, 10 percent of the original face value of the issue.

Almost all convertible bonds are debentures. The bonds' agreement states the number of common shares into which the bond is convertible and the par value of the common shares. As a general rule, the number of common shares is fixed over the lifetime of the bond.

Much more common is the situation where a bond becomes convertible into a greater number of shares. The agreement identifies the number of shares and their par value. If the par value of the common shares is lowered (for example, through a stock split), the bond will, in the future, be convertible into a greater number of shares.

## **C2. Zero-Coupon Bonds**

The *zero-coupon bond* is issued at a discount to its par value, sometimes as low as 20 to 25 percent of its redemption value. Unlike a conventional bond, the zero pays no interest between issuance and redemption but returns the principal amount at maturity. This feature has interesting consequences for buyers. Although the holder forfeits immediate income from the zero, he also locks in the current interest rate for the life of the bond. Because a zero has no coupons to reinvest, its yield in a practical sense is unaffected so long as the holder maintains the position to maturity. From the standpoint of others, however, the zero has highly volatile pricing characteristics. With no cash flow from coupons to act as a cushion, zero prices swing rapidly up and down in response to even minor interest rate changes. Thus, zeros issued at a time when interest rates appear near a peak may provide attractive capital appreciation opportunities.

### ***Advantages of Zeros***

*Locked-in reinvestment yield.* Zeros are sold at a discount from face value and accrue at a fixed compound rate over the entire life of the bond, thus providing a locked-in rate of return when the zero is held to maturity. Therefore, the investor incurs no losses from reinvesting coupon payments at lower rates. In other words, reinvestment risk is eliminated.

*Low purchase price.* Zero coupon bonds are sold at a low purchase price in relation to their maturity amount. Depending upon the number of years to maturity and market levels, the original investment in a zero can grow up to five times by maturity.

*Attractive yield.* Yield on zero-coupon bonds can be higher than the yields on comparable interest-bearing bonds.

*Call protection.* Redemption features on zero-coupon bonds can be higher than the yields on comparable interest-bearing bonds.

*Capital gains potential.* Zero-coupon bonds have a greater potential for capital gains if interest rates decline.

### ***Redemption Features of Zeros***

In contrast to conventional coupon bonds, call features on zero-coupon bonds are based upon the bond's compound accreted value (CAV), which is the price the bond has attained based upon its appreciation from the original issue date at the zero's yield to maturity rate. Call features on zeros

are typically more generous to the investor than those for coupon bonds to safeguard the locked-in reinvestment feature.

### C3. Bonds with Warrants

Another way in which bonds can be made more attractive is by having warrants associated with them. A warrant is a long-term option to buy a specified number of common shares at a specified price called the subscription price. From this viewpoint a warrant is a common stock equivalent.

Since the subscription price is higher than the market price at the time of issuance, the warrant has no intrinsic value, though it may have speculative value. Should the stock's market price advance beyond the subscription price, the warrant then assumes intrinsic value. In fact, the value of the warrant in the market place would be somewhat greater than the amount by which the market price exceeded the subscription price, reflecting the possibility that the market price of the stock may go even higher.

- *Example:* A warrant is issued with a subscription value of LE40. This is LE10 above the current market price of the common stock. In time, the market value of the common stock advances to LE45, giving the warrant an intrinsic value of LE5.

Warrants are often issued as a separate security, i.e., the purchaser may receive a bond *and* a warrant. Both have independent existences—one may be sold and the other kept.

Warrants are also issued as one certificate with two parts—the bond part and the warrant part. In this case, there are two possibilities:

- The warrant is *detachable*, which means that the owner can cut off the warrant and sell it or exercise the privilege of buying the stated number of common shares at the subscription price. In most cases, the owner may also turn in the entire certificate, and the face value of the bond becomes the purchase price of the underlying shares.
- The warrant is *non-detachable*, in which case the bond and warrant are, for all intents and purposes, the same as a convertible bond. This situation is rare as it is more advisable simply to issue a convertible bond.

For the investor, the addition of the warrants makes bonds or other securities more attractive because:

- The warrants may be salable
- The warrants may allow the investor to make a profitable purchase of stock, if the common stock advances in the market value.

For the corporation, the addition of warrants to bonds will:

- Improve the immediate salability of the bonds
- Promise to bring additional capital if the warrants are exercised in the future

#### C4. Some Common Bond Terms

The following are some terms that are common to most bonds, independent of their other features.

##### **Series Bonds**

Bonds of the same issuer with different issue dates are called series bonds. They are easy to identify: they are designated series bonds and are further specified either by the year of issue (e.g., Series of 1989, 1990, 1991, etc.) or by a letter (e.g., Series A, Series B, Series C, etc.)

By itself, *series* describes different issue dates and has nothing to do with how or when the bond is to be retired. Series bonds are usually issued to finance a project that is to be constructed in stages. It would not be prudent to borrow the full sum required by the project all at one time, if the full sum is not initially needed. The money is borrowed in stages to meet the sequential demands of the project. In this way, the interest paid on the borrowed money is minimized.

##### **Term Bonds**

The expression *term bond* refers to an entire issue that matures at the same time. Most corporate and government bonds are term bonds.

##### **Sinking Funds**

Many corporate bonds couple term maturity to early retirement of portions of the issue by means of a *sinking fund*. The sinking fund is simply cash or other assets specifically set aside—usually on an annual basis—for the partial retirement of a debt or the redemption of a preferred stock issue.

The open-market purchase of bonds covered by a sinking fund will take place if there is a general rise in interest rates. In this case, the bonds will likely be selling below the call price and possibly below their face value. This will permit the issuing corporation to fulfill its promise to retire a certain number of bonds at a sizable savings.

From the point of view of the bondholders, the sinking fund can also be advantageous. The bonds will be retired from the issuer's current income, and the issuer will probably try to redeem the bonds by repurchasing them in the marketplace. In general, this will cause the bonds to sell at a slightly higher market price than bonds without sinking funds behind them.

##### **Retirement of Bonds**

Bonds are retired in three ways:

- *Redemption.* Redemption refers to the retirement of corporate debts at maturity, or prior to maturity, with cash out of current income. When a debt security is redeemed at maturity, the corporation repays the principal, or face amount of the certificate, to the holder.
- *Refunding.* Refunding involves the issuance of a new debt security. The proceeds of the new security are used to retire an outstanding bond either at maturity or prior to maturity, if the bond is callable.

By far the most common refunding situation arises when the currently outstanding bonds of a corporation are callable and the corporation can borrow money at an interest rate substantially

below the coupon rate on the outstanding bonds. In such a situation, it will often be advantageous for the company to issue new bonds at a lower rate, and thereby retire bonds bearing a higher interest rate.

- *Conversion.* The exchange of a convertible bond for common shares, thereby retiring the bond. When this occurs, debt is converted into equity and becomes part of the permanent capital of the corporation.

### **Call Feature**

As noted earlier, some corporate bonds have a call feature. This permits early redemption at the option of the issuer.

The earliest call date is stated in the bond's agreement and in the prospectus that accompanies the public sale of the bond. The common expression for the period between the issue date of the bond and the earliest callable date is the cushion. Thus, a new issue of bonds with a five-year cushion means that the bonds are not callable for five years.

The bond's agreement also states the call price. The call price will normally be slightly higher than the face value of the bond, at least for a number of years following the earliest call date. The difference between the face value and the call price is the *call premium*. It is not uncommon, however, for the call price to decrease the longer the bond is outstanding. The call price is never less than the face value.

### **Partial Calls**

If a bond is callable, the issuer usually reserves the right to call all or part of the issue. If only part of an issue of bonds is to be called, the certificates to be called are selected through an impartial lottery. The investor whose bond is called is repaid the principal and any premium to which he is entitled.

To protect investors against the inconvenience of a partial call, the issuer often states in the bond agreement that if the issue is called, it will be a total call.

## APPENDIX A

---

### Bibliography and Further Reading

#### Internet Sites

ADT—Applied Derivatives Trading	( <a href="http://www.ADT.com">www.ADT.com</a> )
AFS—Americans for Financial Security	( <a href="http://www.AFS.com">www.AFS.com</a> )
Andrew Kolatay and Associates Inc.	( <a href="http://www.kolatay.com">www.kolatay.com</a> )
The Bond Market Association	( <a href="http://www.bondmarkets.com">www.bondmarkets.com</a> )
Business First—A Western New York Business Paper	( <a href="http://www.businessfirst.com">www.businessfirst.com</a> )
Business Week	( <a href="http://www.businessweek.com">www.businessweek.com</a> )
Cornell University Law School	( <a href="http://www.cornell.edu">www.cornell.edu</a> )
Deloitte & Touche	( <a href="http://www.deloittetouche.com">www.deloittetouche.com</a> )
Equity Analytics Ltd.	( <a href="http://www.equityanalytics.com">www.equityanalytics.com</a> )
Fitch/IBCA	( <a href="http://www.fitchIBCA.com">www.fitchIBCA.com</a> )
Moody's	( <a href="http://www.moodys.com">www.moodys.com</a> )
MSNBC—"A Lesson in Stocks and Bonds"	( <a href="http://www.msnbc.com">www.msnbc.com</a> )
Prudential Securities	( <a href="http://www.prudential.com">www.prudential.com</a> )
Standard & Poor's	( <a href="http://www.standardpoors.com">www.standardpoors.com</a> )
The Syndicate	( <a href="http://www.syndicate.com">www.syndicate.com</a> )
The Vanguard Group	( <a href="http://www.vanguard.com">www.vanguard.com</a> )

#### Papers:

Briffet, Richard "An Introduction to Derivative Instruments and How They Are Used."

Cowan, Arnold, R. "Convertible, Exchangeable, Preferred Stock," Department of Finance, Iowa State University.

De Roon, Frans and Chris Veld "Announcement Effects of Convertible Bond Loans vs. Warrant Bond Loans," Department of Business Administration, Tilburg University, The Netherlands.

Privatization Project (USAID) "Lessons in Financial Instruments."

#### Books:

Tewles, Richard and Edward Bradley *The Stock Market*.

Stigum, Marcia *The Money Market*.

Valdez, Stephen *An Introduction to Western Financial Markets*.