Article Title: ARCHIVE | Criteria | Insurance | General: Evaluating European Insurers' Capital Adequacy Data: (EDITOR'S NOTE: —This article is no longer current. It has been superseded by an article titled "Analysis Of Insurer Capital Adequacy," which was published on April 22, 2009.) In October 1998, Standard & Poor's introduced its new capital adequacy model for analyzing European insurance companies and groups. This model plays an important role in analyzing capitalization. Although long-established in the U.S., Standard & Poor's capital models are a relatively recent development in the appraisal of European companies. The new criteria have made the analysis more consistent with the goal of creating a global platform for assessing insurers' financial strength. Although the model is consistent with a global approach, it recognizes the diversity of markets in Europe, the different products offered, and differing regulation. This article addresses important features of the model and includes the changes made to the model in May 2000*. The model may be viewed as a regulatory early warning device and, more generally, a measure of how a company or group's capital stands up to reasonably stressful ('BBB' level), but by no means worst-case underwriting and economic conditions. The model begins by adjusting reported capital onto a more realistic basis (for example, by adjusting for hidden asset values and reserve adequacy) to determine total adjusted capital (TAC). TAC is then reduced by 'charges' to reflect realistic expectations of potential losses arising from credit risk and investment market volatility risk. The resulting level of capital is compared with a base level of capital appropriate to support the ongoing business activities at a 'BBB' rating level, which is the lowest secure rating level. The 'capital adequacy ratio' (CAR) is expressed as follows: Therefore, an insurer's capital adequacy is viewed as good if its CAR exceeds 100%. The ranges of capital adequacy consistent with certain rating levels are shown in table 1. Table 1 Capital Adequacy Ranges Per Rating Level CAR INDICATIVE RATING LEVEL ASSESSMENT OF CAPITAL ADEQUACY Below 100% BB or lower Vulnerable 100%-125% BBB Good 125%-150% A Strong 150%-175% AA Very strong Above 175% AAA Extremely strong It should be noted that the CAR is an important, but not the only element in assessing overall capitalization; other quantitative and qualitative measures are used. Also, CARs based on historic data are much less important than expectations of future CARs in determining ratings. Furthermore, capital is only one variable affecting the final rating. GAAP or Statutory? The primary sources of information used for capital models are GAAP financial statements. The quality of financial information and accounting bases used vary considerably among countries, and this phenomenon has been accommodated in the model. However, consistency is increasing as a result of EU directives and the emergence of International Accounting Standards. Local GAAP statements provide a greater level of consistency than statutory returns, which vary considerably by country, and for reinsurance are nonexistent in many European countries. This differs from the U.S., where there is a focus on detailed statutory filings. Company or Group? The focus of analysis for ratings of European companies is generally the parent company's consolidated financial statements because of the more detailed information normally available at the group level. Furthermore, consolidated accounts capture better a group's capital profile, which may not be discernible from operating insurance companies' financial statements (for example, by eliminating the effect of double leverage). Standard & Poor's Insurance Group Rating Methodology¶ outlines criteria for evaluating insurance groups. This is founded initially on the analysis of a consolidated group, treating it as if it were a stand-alone company, and determining a rating for the group. Then, in assigning ratings to insurance company subsidiaries, determinations are made as to whether subsidiaries are core, strategically important, or nonstrategic to the group. Capital adequacy is then assessed for a group, inclusive of its core and strategically important subsidiaries. Where subsidiary companies are viewed as nonstrategic, they are evaluated separately and adjustments are made to deconsolidate them from the group's capital adequacy model. The key elements of the model are explained below. Total Adjusted Capital The starting point for determining TAC is the company or group's reported capital. This is adjusted to reflect the following: The model treats minority interests as a part of a group's TAC since that capital is normally under the control of the parent company. TAC includes allowance for debt instruments to the extent that they are perceived as having equity-like characteristics (hybrid equity). Hybrid equity includes instruments issued by group companies and debt downstreamed as equity capital to operating insurance companies. The maximum amount of hybrid equity that may be included in TAC is limited to 15% when a group includes a nonoperating holding company. However, in the case of mutual insurers or proprietary insurers without

a holding company higher levels of credit are permitted, depending on the applicable rating category (see table 2). Table 2 Hybrid Equity Allowed in Total Adjusted Capital RATING CATEGORY MAXIMUM AS % OF TOTAL CAPITAL AAA 15 AA 20 A 25 BBB and below 30 Unrealized investment gains. TAC includes an adjustment to give full credit for understated investment values, except for bond investments backing life business liabilities. EU directives permit companies to value their assets at cost, amortized cost, market value, or some combination of these in their GAAP financial statements. Where market values can be reliably established, these values are included in TAC. This not only relates to equities and property, but also to bonds, except in those limited cases where they are required to be held to maturity. Bond investments backing life liabilities--where the company matches the term and rate of return applicable to these liabilities with appropriate bonds--are not uplifted to market value; neither do they bear a volatility charge. When the capital model was originally introduced, the intention was that unrealized gains on investments be included in TAC, net of deferred taxation liabilities. Although European companies are increasingly reporting unrealized investment gains net of deferred tax, this practice is not observed consistently. Some companies report investments at their original cost rather than market value; others report investments at market value, but do not account for deferred tax on the resulting unrealized gains. Those companies that do account for unrealized gains may do so in full or on a discounted basis. The model has now been revised to achieve greater consistency across Europe. Now, where unrealized gains are subject to tax, but no related deferred tax is accounted for, then the gross (that is, pretax) unrealized gains will be included in TAC, but will be "haircut" by 10%. The 10% charge represents a reasonable level of discounted tax liability since the ultimate payment of this liability may not crystallize at all; but if it does, it will not normally crystallize for several years. The detailed criteria for the treatment of unrealized gains and related deferred tax are now as follows (only one of the following five scenarios will apply): -- Where gains are not subject to tax and the accounting policy: Is to recognize unrealized gains, no adjustment to equity will be made. Is not to recognize unrealized gains, the gross gains will be added to equity. -- Where gains are subject to tax and the accounting policy: Is to recognize unrealized gains and the related deferred tax, no adjustment to equity will be made. Is to recognize unrealized gains, but not the related deferred tax, equity will be reduced by a haircut of 10% of the gross unrealized gains. Is not to recognize unrealized gains (nor the related deferred tax), 90% of gross unrealized gains will be added to equity. Note: No credit will be given for deferred tax assets. All of the above are subject to analyst adjustments where appropriate. The treatment of goodwill. The original European capital model only allowed up to 50% credit for goodwill on subsidiaries that were viewed by Standard & Poor's as not strategically important to their parent. This was because a group is unlikely to dispose of core and strategically important subsidiaries and, therefore, is unlikely to realize the related goodwill. This criterion has now been partly relaxed to include up to 50% goodwill credit for all nonstrategic and strategically important subsidiaries. The inclusion of strategically important subsidiaries recognizes that these companies typically retain a distinct identity and that related goodwill has an identifiable value and, in times of stress, this goodwill could be realized at least in part. Goodwill related to core subsidiaries will not be given any credit since core companies are typically fully integrated into a group and, therefore, the goodwill can rarely be separately identifiable. Furthermore, the group is likely to be realizing the goodwill through enhanced earnings by the time a subsidiary is considered core. Offsetting this partial relaxation of the criterion, goodwill credit will now be amortized over four years. There was no amortization included in the original model. The inclusion of goodwill amortization is deemed necessary now since goodwill loses its identity over time. Credit will be given as in the table immediately below: % CREDIT At the first year-end following the acquisition 50 At the first subsequent year-end 37 At the second subsequent year-end 25 At the third subsequent year-end 12 At the fourth subsequent year-end 0 In countries where goodwill is written off in the year of acquisition, goodwill will be added back to equity, subject to the limitations set out above. Nonlife reserves. Where catastrophe, equalization, and other 'hidden' reserves act clearly as equity capital in an economic sense, despite being treated as liabilities in companies' financial statements, TAC is adjusted to treat them as equity. Where the analysis of companies' nonlife loss reserves demonstrate that they are redundant or deficient, appropriate adjustments are made to TAC. TAC is adjusted to eliminate any explicit or implicit discount of nonlife loss reserves. After reserves are adjusted to adequate levels, a calculation of the estimated time value of money inherent in the reserves

is made and credited to TAC. The treatment of future profits for life insurance business. The treatment of future profits for life insurance business in Standard & Poor's capital models is complicated by the many different accounting policies adopted across Europe. The intention of Standard & Poor's criteria is to give 100% credit to all profits recognized on a statutory basis (which will normally already be fully recognized in shareholders' equity) and 50% credit to future profits. These future profits may be recognized in the form of embedded values (in which case, to avoid double counting, 50% credit is given only to the value-in-force component of the embedded value net of related deferred taxation), deferred acquisition costs (in which case, 50% credit is given to deferred acquisition costs net of related deferred taxation) or other means. Clearly, in cases where future profits are already recognized under a company's accounting policy, a deduction from shareholders' equity will be made to evaluate TAC, and, where they are not included, an addition will be made. Nonlife deferred acquisition costs is eliminated from TAC since the premium risk factors have been reduced to allow for acquisition costs. TAC includes 50% of any unpaid amounts on partly paid shares since the company is legally entitled to collect these amounts, although not immediately. Investment-related charges. The company or group's investments and other assets are reviewed for default, volatility, and credit risk; and appropriate 'charges' established. Corporate bonds are charged in accordance with their credit rating. The charge is based on the present value of expected default losses, which are assumed to occur over a 10-year period, with a 50% recovery rate. Default and recovery expectations are based on Standard & Poor's default analyses. 'AAA' rated government and government-agency bonds bear no charges. Mortgages are charged for the risk of foreclosure, delinquency, and restructuring. Nonperforming mortgages are charged at 14% and the remainder at 2%. All bonds are charged for volatility risk since the predominant basis for investment valuation is market value for local regulation. Furthermore, most bond portfolios are actively traded rather than held to maturity. Consequently, the solvency of many European insurers was volatile in the early to mid-1990s because of market interest-rate movements. The charges are made against the bonds' full market value, with the charge varying by the period remaining to maturity. The charges are consistent with an immediate 100-basis point increase in interest rates (bonds with periods to maturity of up to two years are charged at 1%, two to five years at 3%, and others at 5%). Volatility charges are not applied to bond investments backing life liabilities where the company matches the term and rate of return applicable to these liabilities with appropriate bonds. Equity shares are charged at 15% of market value, representing one standard deviation of the S&P; 500 Stock Index year-on-year movements since 1945. Preference shares are charged at 6% of market value based on Standard & Poor's estimate of average credit quality of such issues. Property is charged at a standard rate of 18% of market value. This rate is intentionally higher than the equity volatility charge to deal not only with the inherent volatility, but also the valuation risk. Unlike equities, properties do not have a liquid market with verifiable market prices. Property valuations typically assume the existence of a willing buyer. However, if there is strong evidence that this charge overstates (or understates) the volatility risk in certain countries, then the rate of charge may be varied at the analyst's discretion. Concentration risk is recognized and charged where aggregate holdings (of bonds and equity shares) in a single entity or property exceed 10% of TAC. The charge is graduated depending on the degree of concentration. A size-factor adjustment may be added to the investment-related charges. This recognizes that the larger a company or group's investment portfolio, the more diversified it is likely to be and, therefore, better able to withstand various risks. No size factor adjustment is applied where invested assets exceed euro (Eur) 1.2 billion, otherwise a factor of up to 2.5 is applied to investment-related charges (if total invested assets are less than Eur100 million). The factor is graduated for invested assets above Eur100 million. It is not applied to core or strategically important subsidiaries of groups where a size-adjustment factor is not required. Other credit-related charges. Other credit-related charges stem largely from the reinsurance recoverable default risk. The charges are based on the observed default rate of reinsurance companies by rating category. The charges are applied to the amounts due from reinsurers and to ceded loss reserves (including those incurred, but not reported). No charge is applied where such amounts are secured by letter of credit or by reinsurance deposits. Other noninvested assets. Other noninvested assets that are not subject to specific charges elsewhere in the model are subject to a 3% credit risk charge. Underwriting Risk and Reserve Risk For nonlife business, underwriting risk stems from the possibility that the actual cost of

claims will vary from the expected cost implicit in the premiums currently being charged. Where this produces underwriting losses, these losses will need to be financed by capital. Reserve risk arises from the possibility that the actual cost of claims will vary from the expected cost reflected in the currently reported loss reserves. The reserve risk charge does not address the adequacy of current reserves, which is dealt with separately as a TAC adjustment. Instead, it measures the expected variability in reserve levels and the capital required to finance this. Such variations result from deviations from expected levels of frequency and severity, which can be exacerbated by changes in economic, legal, and social conditions. The premium and reserve charges adopted by Standard & Poor's to quantify these risks are founded on the methodology employed by the American Academy of Actuaries Property/Casualty Risk-Based Capital Task Force. The methodology employs an expected policyholder deficit (rather than a worst-case scenario) approach, with the policyholder deficit set to an acceptably low level. Expected claim costs are adjusted to a present value basis. Charges are established for each major class of business, reflecting the relative volatility of each class. The charges were calculated by the Task Force for application in the U.S. and, therefore, use the U.S. statutory classes of business. Standard & Poor's would have preferred to use data applicable to European experience, but, given the lack of consistent and reliable data within individual European countries, let alone EU-wide, the use of U.S. data was unavoidable. Adjustments have been made to convert the charges into an EU accounting class format. Certain adjustments were also made to reflect European experience where it differs significantly from the U.S. Furthermore, given the highly diversified assumed reinsurance market in Europe, separate charges have been established for each class of business for nonproportional treaty and facultative reinsurance business. Charges also have been added for credit business and finite reinsurance business. Premium charges are applied to premiums written net of reinsurance, but gross of acquisition costs (see table 3). Table 3 Premium Charges CLASS OF BUSINESS (%) DIRECT REINSURANCE PROPORTIONAL NONPROPORTIONAL AND FACULTATIVE Health 12 12 18 Accident 18 18 27 Motor 12 12 18 Marine, aviation, and transport 17 17 26 Property 19 19 30 Liability 27 27 29 Pecuniary 18 18 27 Credit 75 75 115 Finite N/A N/A 4 *For a reinsurer writing catastrophe exposed business, the property premium charge is replaced by the estimated impact on capital (including reinstatement premiums, but excluding tax recoveries) of a loss scenario representing a worst-case event (normally with a severity of at least a once in 100-year return period) relevant to the company or group. This adjustment does not apply to companies and groups that are predominantly insurers rather than reinsurers. Multiyear insurance contracts are an increasingly common feature in nonlife insurance business. The capital model uses (yearly) premiums as a proxy for exposure. Given the increasing influence of multiyear contacts, adjustments to the premium charges are required depending on the accounting treatment used. Where multiyear insurance premiums are spread over the relevant policy period through written premiums, no adjustments are required. However, where the premium is recognized in full through written premiums in the year in which the policy is written, premium charges for that business should be based on earned premiums rather than written premiums. Reserve charges are applied to loss reserves net of reinsurance recoverable (see table 4). Table 4 Reserve Charges (%) DIRECT REINSURANCE PROPORTIONAL NONPROPORTIONAL AND FACULTATIVE Health 5 5 5 Accident 28 28 28 Motor 12 12 12 Marine, aviation, and transport 16 16 16 Property 22 22 22 Liability 10 10 10 Pecuniary 28 28 28 Credit 25 25 25 Finite N/A N/A 6 N/A-—Not applicable. Life Reserve Risk Given the long-term nature of life insurance business, charges are currently based on reserves (and sums at risk). The EU regulatory minimum capital requirements are risk-based, although not highly sophisticated. Standard & Poor's view overall is that the regulatory minimum levels are relatively conservative and, accordingly, a 'BBB' level of capital adequacy can be achieved at 125% of the minimum requirement. The only exception to this is certain unit-linked business (where no policy guarantees are provided) that has no capital requirement. In this case, an asset management charge of 0.5% of the related linked assets is applied. Noninsurance Risk For groups with relatively small banking subsidiaries, a capital charge of 8% of risk-weighted banking assets is made. For larger banking operations, a separate, detailed analysis of capital adequacy will normally be performed. Where a company or group is involved in third-party asset management, with the assets held off-balance sheet, an asset management charge of 0.5% of assets under management is applied. Further Enhancements To The Model The model remains under constant review and will be

enhanced as new criteria are developed. However, the basic concept will remain unchanged. Standard & Poor's has issued criteria for evaluating credit insurance and reinsurance operations. These criteria will be incorporated into the European model for companies writing significant levels of credit business. Standard & Poor's expects to issue further criteria related to European life insurance business later in the year. Furthermore, the treatment of catastrophe risk and charges for equity shares are under review. *A copy of the model with full explanatory notes can be obtained from Standard & Poor's on request. ¶Standard & Poor's Insurance Group Rating Methodology can be found on Standard & Poor's Web site at standardandpoors.com/ratings