ARCH CAPITAL GROUP LTD Form 424B3 March 08, 2004

OuickLinks -- Click here to rapidly navigate through this document

Filed Pursuant to Rule 424(b) File Number 333-98971

ARCH CAPITAL GROUP LTD.

PROSPECTUS SUPPLEMENT DATED MARCH 8, 2004 TO PROSPECTUS DATED AUGUST 30, 2002

This prospectus supplement supplements our prospectus dated August 30, 2002 relating to the reoffers and resales of our common shares, par value \$.01 per share, issued or issuable under our 2002 Long Term Incentive and Share Award Plan (the "Plan"). This prospectus supplement sets forth a list of the current selling shareholders and updates the number of common shares available to be resold by each selling shareholder under the Plan. This prospectus supplement should be read in conjunction with the prospectus and this prospectus supplement is qualified by reference to the prospectus except to the extent that the information contained herein supersedes the information contained in the prospectus.

SELLING SHAREHOLDERS

The following table sets forth certain information concerning the selling shareholders as of March 8, 2004. Except as disclosed below, none of the selling shareholders has, or within the past three years has had, any position, office or other material relationship with us:

Name	Position with the Company	Shares Owned Prior to Offering	Maximum Number of Shares Owned and/or Subject to Outstanding Options Which May Be Offered Hereby (1)
John M. Pasquesi	Vice Chairman and Director	1,552,250(2)	1,563(2)
Peter A. Appel	Director, former President and Chief		
	Executive Officer	887,714(3)	10,533(3)
Wolfe H. Bragin	Director	3,499(4)	3,499(4)
John L. Bunce, Jr.	Director	14,359,138(5)	4,273(5)
Sean D. Carney	Director	2,140(6)	2,140(6)
Dwight R. Evans	President of Arch Reinsurance Ltd.	206,421(7)	33,794(7)
Constantine Iordanou	Director, President and Chief Executive Officer	826,788(8)	35,525(8)
Ralph E. Jones, III	President and Chief Executive Officer of Arch Insurance Group Inc.	150,100(9)	153,571(9)
Kewsong Lee	Director	22,917,814(10)	4,273(10)
James J. Meenaghan	Director	25,886(11)	4,273(11)
David R. Tunnell	Director	14,359,138(12)	3,758(12)
Robert F. Works	Director	29,745(13)	4,273(13)
John D. Vollaro	Executive Vice President, Chief Financial	, , ,	, , ,
	Officer and Treasurer	142,350(14)	7,350(14)
John F. Rathgeber	Managing Director and Chief Operating Officer of Arch Reinsurance Company	80,543(15)	5,890(15)
Louis T. Petrillo	President and General Counsel of Arch Capital Services Inc.	95,583(16)	1,726(16)
	•		, , , ,

Represents the number of common shares issued or issuable under the Plan to each selling shareholder. Does not constitute a commitment to sell any or all of the stated number of common

shares. The number of shares offered shall be determined from time to time by each selling shareholder at his discretion.

- Amounts include (a) 1,563 common shares owned directly (including 558 restricted shares which are subject to vesting), (b) 37,110 common shares owned directly by Otter Capital, LLC, for which Mr. Pasquesi serves as the managing member, (c) 1,126,419 common shares issuable upon exercise of currently exercisable options and (d) 387,158 common shares issuable upon conversion of preference shares.
- Amounts include (a) 147,886 common shares owned directly by Mr. Appel (including 607 restricted shares which are subject to vesting), (b) 688,207 common shares issuable upon exercise of currently exercisable stock options and (c) 51,621 common shares issuable upon conversion of preference shares.
- (4)
 Amounts include (a) 1,699 common shares owned directly by Mr. Bragin (including 607 restricted shares which are subject to vesting) and (b) 1,800 common shares issuable upon exercise of stock options (100 of such shares are issuable upon exercise of stock options which are subject to vesting).
- Amounts include securities held by or for the benefit of HFCP IV (Bermuda), L.P. ("HFCP IV Bermuda"), H&F International Partners IV-A (Bermuda), L.P. ("HFIP IV-A Bermuda"), H&F International Partners IV-B (Bermuda), L.P. ("HFIP IV-B Bermuda") and H&F Executive Fund IV (Bermuda), L.P. ("HFEF Bermuda," and together with HFCP IV Bermuda, HFIP IV-A Bermuda and HFIP IV-B Bermuda, the "H&F Funds"). H&F Investors IV (Bermuda), L.P. ("HFI IV Bermuda") is the sole general partner of the H&F Funds. H&F Corporate Investors IV (Bermuda) Ltd. ("HFCI Bermuda") is the sole general partner of HFI IV Bermuda. HFI IV Bermuda may be deemed to control the H&F Funds. Mr. Bunce is a member of an investment committee of HFCI Bermuda which has investment discretion over the securities held by the H&F Funds. Mr. Bunce is a 9.9% shareholder of HFCI Bermuda. All shares indicated as owned by Mr. Bunce are included because he is a member of the board of directors of ACGL and is affiliated with HFCI Bermuda. Mr. Bunce may be deemed to have an indirect pecuniary interest (within the meaning of Rule 16a-1 under the Exchange Act) in an indeterminate portion of the shares beneficially owned by the H&F Funds. Mr. Bunce disclaims beneficial ownership of all shares owned by the H&F Funds, except to the extent of his indirect pecuniary interest in the issuer held through the H&F Funds. Based on Form 4s dated March 4, 2003 and October 3, 2003 filed with the Securities Exchange Commission ("SEC") by Mr. Bunce.
- (6)
 Amounts include (a) 1,840 common shares owned directly by Mr. Carney (including 607 restricted shares which are subject to vesting) and (b) 300 common shares issuable upon exercise of stock options (200 of such shares are issuable upon exercise of stock options which are subject to vesting).
- Amounts include (a) 60,773 common shares owned directly by Mr. Evans (including 55,403 restricted shares which are subject to vesting), (b) 125,000 common shares issuable upon exercise of stock options (8,333 of such shares are issuable upon exercise of stock options which are subject to vesting) and (c) 20,648 common shares issuable upon conversion of preference shares.
- Amounts include (a) 401,788 common shares owned directly by Mr. Iordanou (including 338,393 restricted shares which are subject to vesting and 7,419 common shares owned directly by Mr. Iordanou's children) and (b) 425,000 common shares issuable upon exercise of stock options (141,666 of such shares are issuable upon exercise of stock options which are subject to vesting). In addition, as listed in the column entitled, "Maximum Number of Shares Owned and/or Subject to Outstanding Options Which May be Offered Hereby", Mr. Iordanou holds 17,668 restricted common share units (8,834 of such units are subject to vesting) which will be settled in common

2

shares of Arch Capital Group Ltd. upon termination of Mr. Iordanou's employment. Mr. Iordanou disclaims beneficial ownership of all shares owned by his children.

- Amounts include (a) 50,100 common shares owned directly by Mr. Jones (including 50,000 restricted shares which are subject to vesting) and (b) 100,000 common shares issuable upon exercise of stock options (66,666 of such shares are issuable upon exercise of stock options which are subject to vesting). In addition, as listed in the column entitled, "Maximum Number of Shares Owned and/or Subject to Outstanding Options Which May be Offered Hereby", Mr. Jones holds 3,571 restricted common share units (2,678 of such units are subject to vesting) which will be settled in common shares of Arch Capital Group Ltd. upon termination of Mr. Jones' employment.
- Amounts include securities held by or for the benefit of Warburg Pincus (Bermuda) Private Equity VIII, L.P. ("WP VIII Bermuda"), Warburg Pincus (Bermuda) International Partners, L.P. ("WPIP Bermuda"), Warburg Pincus Netherlands International Partners I, C.V. ("WPIP Netherlands I") and Warburg Pincus Netherlands International Partners II, C.V. ("WPIP Netherlands II"). Warburg Pincus (Bermuda) Private Equity Ltd. ("WP VIII Bermuda Ltd.") is the sole general partner of WP VIII Bermuda. Warburg Pincus (Bermuda) International Ltd. ("WPIP Bermuda Ltd.") is the sole general partner of WPIP Bermuda, Warburg, Pincus & Co. ("WP") is the sole general partner of WPIP Netherlands I and WPIP Netherlands II. WP VIII Bermuda, WPIP Bermuda, WPIP Netherlands I and WPIP Netherlands II are managed by Warburg Pincus LLC ("WP LLC"). The foregoing is based on a Schedule 13D dated December 18, 2002 and filed with the SEC by these entities. Mr. Lee is a general partner of WP, a managing director and member of WP LLC and a beneficial owner of certain shares of capital stock of WP VIII Bermuda Ltd. and WPIP Bermuda Ltd. All shares indicated as owned by Mr. Lee are included because he is a member of our Board and is affiliated with these Warburg Pincus entities. Mr. Lee may be deemed to have an indirect pecuniary interest (within the meaning of Rule 16a-1 under the Exchange Act) in an indeterminate portion of the shares owned by WP VIII Bermuda, WPIP Bermuda, WPIP Netherlands I and WPIP Netherlands II. Mr. Lee disclaims beneficial ownership of all shares owned by these Warburg Pincus entities.
- (11)
 Amounts include (a) 7,586 common shares owned directly by Mr. Meenaghan (including 607 restricted shares which are subject to vesting) and (b) 18,300 common shares issuable upon exercise of stock options.
- Amounts include securities held by or for the benefit of HFCP IV (Bermuda), L.P. ("HFCP IV Bermuda"), H&F International Partners IV-A (Bermuda), L.P. ("HFIP IV-A Bermuda"), H&F International Partners IV-B (Bermuda), L.P. ("HFIP IV-B Bermuda") and H&F Executive Fund IV (Bermuda), L.P. ("HFEF Bermuda," and together with HFCP IV Bermuda, HFIP IV-A Bermuda and HFIP IV-B Bermuda, the "H&F Funds"). H&F Investors IV (Bermuda), L.P. ("HFI IV Bermuda") is the sole general partner of the H&F Funds. H&F Corporate Investors IV (Bermuda) Ltd. ("HFCI Bermuda") is the sole general partner of HFI IV Bermuda. HFI IV Bermuda may be deemed to control the H&F Funds. The foregoing is based on a Schedule 13D and a Form 4 dated March 4, 2003 and December 18, 2002, respectively, and filed with the SEC. Mr. Tunnell is a member of an investment committee of HFCI Bermuda which has investment discretion over the securities held by the H&F Funds. Mr. Tunnell is a 5.45% shareholder of HFCI Bermuda. All shares indicated as owned by Mr. Tunnell are included because he is a member of the board of directors of ACGL and is affiliated with HFCI Bermuda. Mr. Tunnell may be deemed to have an indirect pecuniary interest (within the meaning of Rule 16a-1 under the Exchange Act) in an indeterminate portion of the shares beneficially owned by the H&F Funds. Mr. Tunnell disclaims beneficial ownership of all shares owned by the H&F Funds, except to the extent of his indirect pecuniary interest in the issuer held through the H&F Funds.

3

- Amounts include (a) 8,445 common shares owned directly by Mr. Works (including 607 restricted shares which are subject to vesting) and (b) 21,300 common shares issuable upon exercise of stock options.
- Amounts include (a) 57,350 common shares owned directly by Mr. Vollaro (including 53,674 restricted shares which are subject to vesting) and (b) 85,000 common shares issuable upon exercise of stock options (28,333 of such shares are issuable upon exercise of stock options which are subject to vesting).
- Amounts include (a) 15,543 common shares owned directly by Mr. Rathgeber (including 12,713 restricted shares which are subject to vesting) and (b) 65,000 common shares issuable upon exercise of stock options.
- (16)
 Amounts include (a) 7,783 common shares owned directly by Mr. Petrillo (including 971 restricted shares which are subject to vesting) and (b) 87,800 common shares issuable upon exercise of stock options.

Information concerning the selling shareholders may change from time to time and will be set forth in future supplements. Accordingly, the identity of the selling shareholders may change and the number of shares of common shares offered hereby may increase or decrease. Full copies of the prospectus will be provided upon request.

4

QuickLinks

ARCH CAPITAL GROUP LTD. PROSPECTUS SUPPLEMENT DATED MARCH 8, 2004 TO PROSPECTUS DATED AUGUST 30, 2002 SELLING SHAREHOLDERS