Registration No. 333-

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form S-1

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

CHICAGO MERCANTILE EXCHANGE HOLDINGS INC.

(Exact Name of Registrant as Specified in Its Charter)

Delaware

(State or Other Jurisdiction of Incorporation or Organization)

6200

(Primary Standard Industrial Classification Code Number)

36-4459170

(I.R.S. Employer Identification Number)

30 South Wacker Drive Chicago, Illinois 60606 (312) 930-1000

(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

Craig S. Donohue, Esq.
Executive Vice President and Chief Administrative Officer
Chicago Mercantile Exchange Holdings Inc.
30 South Wacker Drive
Chicago, Illinois 60606
(312) 930-1000

(Name, Address, Including Zip Code, and Telephone Number, Including Area Code, of Agent For Service)

Copies To:

Rodd M. Schreiber, Esq.

Skadden, Arps, Slate, Meagher & Flom (Illinois) 333 West Wacker Drive Chicago, Illinois 60606 (312) 407-0700 Leslie N. Silverman, Esq.

Cleary, Gottlieb, Steen & Hamilton One Liberty Plaza New York, New York 10006 (212) 225-2380

APPROXIMATE DATE OF COMMENCEMENT OF PROPOSED SALE TO THE PUBLIC: As soon as practicable after the effective date of this Registration Statement.

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. o

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ⊠ [333-90106]

If this form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If delivery of the prospectus is expected to be made pursuant to Rule 434, check the following box. o

CALCULATION OF REGISTRATION FEE

	Title of Each Class of Securities to be Registered		Proposed Maximum Aggregate Offering Price (1)	Amount of Registration Fee (2)	
	A Common Stock, par value \$.01 per share (including rights A Junior Participating Preferred Stock pursuant to our right		\$5,463,730	\$503	
(1) (2)					
	THIS REGISTRATION STATEMENT SHALL BECOM E 462(b) UNDER THE SECURITIES ACT OF 1933.	E EFFECTIV	E UPON FILING WITH THE COMN	MISSION IN ACCORDANCE WITH	
(the "to the Stater Stater	This registration statement is being filed by Chicago Mercant Commission") pursuant to Rule 462(b) promulgated under the public offering of Class A common stock, par value \$.01 per nent on Form S-1 (File No. 333-90106), which was declared ment"). This registration statement is being filed for the sole 766,820 registered under the Prior Registration Statement to	tile Exchange For the Securities Act of the "Control of the "Control of the Exception of th	ct of 1933, as amended (the "Securities A common Stock"), of the Company contem- ne Commission on December 5, 2002 at a reasing the maximum aggregate offering	Act"). This registration statement relates uplated by the Company's Registration 4:30 p.m. EDT (the "Prior Registration price for the Common Stock from the	
	INCORPORATION O	OF CERTAIN	INFORMATION BY REFERENCE		
	n accordance with General Instruction V to Form S-1 and Ronce the contents of the Prior Registration Statement.		nulgated under the Securities Act, this re	gistration statement incorporates by	
		SIGNA	TURES		
	Pursuant to the requirements of the Securities Act of 1933, th signed, thereunto duly authorized, in the City of Chicago, St	•	ž G	to be signed on its behalf by the	
		CHICAGO	MERCANTILE EXCHANGE HOLDIN	GS INC.	
		By:	/s/ JAMES J. MO	CNULTY	
			James J. M President and Chief E		
	Pursuant to the requirements of the Securities Act of 1933, the on December 5, 2002.	is Registration	Statement has been signed by the follow	ring persons in the capacities indicated	
	Signature	Title			
	*				
	James J. McNulty	President a	nd Chief Executive Officer and Director		
	*				
	Terrence A. Duffy	Chairman o	of the Board and Director		
	*				
	David G. Gomach	Managing 1	Director and Chief Financial Officer		

Managing Director and Chief Accounting Officer

Director

Nancy W. Goble

Timothy R. Brennan

*	Director
John W. Croghan	
*	
Martin J. Gepsman	Director
	3
*	
Daniel R. Glickman	Director
*	
Scott Gordon	Director
*	
Yra G. Harris	Director
*	
Bruce F. Johnson	Director
*	
Gary M. Katler	Director
*	
Patrick B. Lynch	Director
*	
Leo Melamed	Director
*	
John D. Newhouse	Director
*	
James E. Oliff	Director
*	
William G. Salatich, Jr.	Director
*	
John F. Sandner	Director
	4
Myron S. Scholes	Director
Verne O. Sedlacek	Director
*	
	Director

* Director

Howard J. Siegel

*By: /s/ CRAIG S. DONOHUE

Craig S. Donohue as attorney-in-fact (1)

(1) The power of attorney pursuant to which Mr. Donohue has signed this registration statement is contained in the Prior Registration Statement.

5

EXHIBIT INDEX

Exhibit Number	Description of Exhibit		
5.1	Opinion of Skadden, Arps, Slate, Meagher & Flom (Illinois), special counsel to Chicago Mercantile Exchange Holdings Inc.		
23.1	Consent of Ernst & Young LLP.		
23.2	Consent of Skadden, Arps, Slate, Meagher & Flom (Illinois) (included in Exhibit 5.1).		
	6		

QuickLinks

SIGNATURES EXHIBIT INDEX

Exhibit 5.1

Skadden, Arps, Slate, Meagher & Flom (Illinois) 333 West Wacker Drive Chicago, Illinois 60606-1285

December 5, 2002

Chicago Mercantile Exchange Holdings Inc. 30 South Wacker Drive Chicago, Illinois 60606

> Re: Chicago Mercantile Exchange Holdings Inc. Registration Statement on Form S-1

Ladies and Gentlemen:

We have acted as special counsel to Chicago Mercantile Exchange Holdings Inc., a Delaware corporation (the "Company"), in connection with the initial public offering by the Company of up to 3,712,660 shares (including 712,660 shares subject to an over-allotment option) (the "Primary Shares") and the sale by certain selling shareholders (the "Selling Shareholders") of up to 1,751,070 shares (the "Secondary Shares") of the Company's Class A common stock, par value \$.01 per share (the "Common Stock").

This opinion is being furnished in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act of 1933, as amended (the "Act").

In rendering the opinions set forth herein, we have examined originals or copies, certified or otherwise identified to our satisfaction, of (i) the Registration Statement on Form S-1 (File No. 333-90106) as filed with the Securities and Exchange Commission (the "Commission") on June 10, 2002 under the Act; (ii) Amendment No. 1 to the Registration Statement as filed with the Commission on September 27, 2002 under the Act; (iii) Amendment No. 2 to the Registration Statement as filed with the Commission on October 24, 2002 under the Act; (iv) Amendment No. 3 to the Registration Statement as filed with the Commission on October 29, 2002 under the Act; (v) Amendment No. 4 to the Registration Statement as filed with the Commission on November 12, 2002 under the Act; (vi) Amendment No. 5 to the Registration Statement as filed with the Commission on November 18, 2002 under the Act; (vii) Amendment No. 6 to the Registration Statement as filed with the Commission on December 2, 2002 under the Act; (viii) Amendment No. 7 to the Registration Statement as filed with the Commission on December 4, 2002 (such Registration Statement, as so amended and declared effective by the Commission on December 5, 2002, being hereinafter referred to as the "Initial Registration Statement"); (ix) the abbreviated Registration Statement on Form S-1 of the Company as filed with the Commission on the date hereof pursuant to Rule 462(b) under the Act (the "462(b) Registration Statement"); (x) the Underwriting Agreement (the "Underwriting Agreement"), dated the date hereof, entered into by and among the Company, as issuer, Chicago Mercantile Exchange Inc., a Delaware corporation and wholly owned subsidiary of the Company, the Selling Shareholders and, Morgan Stanley & Co. Incorporated, UBS Warburg LLC, J.P. Morgan Securities Inc., Salomon Smith Barney Inc. and William Blair & Company, L.L.C., as representatives of the several underwriters named therein (the "Underwriters"); (xi) the Agreements and Powers of Attorney entered into among the Selling Shareholders, the Attorneys-in-Fact and the Custodian; (xii) a specimen certificate representing the Common Stock; (xiii) the Amended and Restated Certificate of Incorporation of the Company, as amended to date and currently in effect and as in effect at the time of original issuance and sale of the Secondary Shares (the "Certificate of Incorporation"); (xiv) the Amended and Restated By-Laws of the Company, as amended to date and currently in effect and as in effect at the time of original issuance and sale of the Secondary Shares; (xv) certain resolutions of the Board of Directors of the Company, relating to the issuance and sale of the Primary Shares and related matters; (xvi) certain resolutions of the Board of Directors of the Company relating to the original

issuance of the Secondary Shares and related matters; (xvii) the Agreement and Plan of Merger, dated as of October 1, 2001, among the Company, CME Merger Subsidiary Inc., a Delaware corporation, and CME (the "Merger Agreement"); and (xviii) the Certificate of Merger, dated December 3, 2001, filed with the Secretary of State of the State of Delaware, relating to the merger consummated pursuant to the Merger Agreement. We also have examined originals or copies, certified or otherwise identified to our satisfaction, of such records of the Company and such agreements, certificates of public officials, certificates of officers or other representatives of the Company and others, and such other documents, certificates and records as we have deemed necessary or appropriate as a basis for the opinions set forth herein.

In our examination, we have assumed the legal capacity of all natural persons, the genuineness of all signatures, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as certified, conformed or photostatic copies and the authenticity of the originals of such latter documents. In making our examination of executed documents, we have assumed that the parties thereto, other than the Company, its directors and officers, had the power, corporate or other, to enter into and perform all obligations thereunder and have also assumed the due authorization by all requisite action, corporate or other, and execution and delivery by such parties of such documents and the validity and binding effect thereof on such parties. As to any facts material to the opinions expressed herein which we have not independently established or verified, we have relied upon statements and representations of officers and other representatives of the Company and others.

Members of our firm are admitted to the bar in the State of Illinois and we do not express any opinion as to the laws of any jurisdiction other than the corporate laws of the State of Delaware, and we do not express any opinion as to the effect of any other laws on the opinions stated herein.

Based upon and subject to the foregoing, we are of the opinion that:

1. When certificates representing the Primary Shares in the form of the specimen certificate examined by us have been manually signed by an authorized officer of the transfer agent and registrar for the Common Stock and registered by such transfer agent and registrar, and have been delivered to and paid for by the Underwriters at a price per share not less than the per share par value of the Common Stock as contemplated by the Underwriting Agreement, the issuance and sale of the Primary Shares will have been duly authorized, and the Primary Shares will be validly issued, fully paid and nonassessable.

2. The Secondary Shares have been duly authorized and validly issued and are fully paid and nonassessable.

We hereby consent to the filing of this opinion with the Commission as an exhibit to the 462(b) Registration Statement. We also consent to the reference to our firm under the caption "Legal Matters" in the prospectus included in the Initial Registration Statement. In giving this consent, we do not thereby admit that we are included in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Commission.

Very truly yours,

/s/ Skadden, Arps, Slate, Meagher & Flom (Illinois)

Skadden, Arps, Slate, Meagher & Flom (Illinois)

2

QuickLinks

Exhibit 5.1

Exhibit 23.1

Consent of Independent Auditors

We consent to the incorporation by reference in this Registration Statement filed under Rule 462(b) of Chicago Mercantile Exchange Holdings Inc. of our report dated August 30, 2002 included in Amendment No. 6 to the Registration Statement (Form S-1 No. 333-90106) and related prospectus of Chicago Mercantile Exchange Holdings Inc. filed with the Securities and Exchange Commission.

/s/ ERNST & YOUNG LLP ERNST & YOUNG LLP

Chicago, Illinois December 5, 2002

QuickLinks

Exhibit 23.1

Consent of Independent Auditors