GLAXOSMITHKLINE PLC Form 6-K July 01, 2008

FORM 6-K

SECURITIES AND EXCHANGE COMMISSION Washington D.C. 20549

Report of Foreign Issuer

Pursuant to Rule 13a-16 or 15d-16 of the Securities Exchange Act of 1934

For period ending July 01, 2008

GlaxoSmithKline plc (Name of registrant)

980 Great West Road, Brentford, Middlesex, TW8 9GS (Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports under cover Form 20-F or Form 40-F

Form 20-F x Form 40-F

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Indicate by check mark whether the registrant by furnishing the information contained in this Form is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934.

Yes No x

GlaxoSmithKline plc (the 'Company') announces that in accordance with the authority granted by shareholders at the Company's Annual General Meeting on 2 1 May 200 it purchased 3,195,00 of its Ordinary shares of 25 pence each ('shares') on 1 July 200 8 at a price of 1098.7972 pence per share. The shares will be cancelled. Following the cancellation of these shares, the Company holds 474,194,158 of its shares in Treasury, representing 8.97 % of the total voting rights in the Company. The Company has 5. 28 4 347 049 shares in issue (excluding Treasury shares). This number represents the total voting rights in the Company and may be used by shareholders as the denominator for the calculations by which they can determine if they are required to notify their interest in, or a change to their interest

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in the Company under the Financial Services Authority's Disclosure and

Transparency Rules.

This announcement does not constitute, or form part of, an offer or any

solicitation of an offer to purchase or subscribe for securities in any

jurisdiction and is in conformity with the Financial Services Authority's

Disclosure and Transparency Rules.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorised.

GlaxoSmithKline plc

(Registrant)

Date: July 01, 2008

By: VICTORIA WHYTE

Victoria Whyte Authorised Signatory for and on behalf of GlaxoSmithKline plc

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