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**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**  
Washington, D.C. 20549

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**FORM 6-K**

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**REPORT OF FOREIGN PRIVATE ISSUER  
PURSUANT TO RULE 13a-16 OR 15d-16  
UNDER THE SECURITIES EXCHANGE ACT OF 1934**

**For the month of September 2018**

**Commission File Number 001-33159**

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**AERCAP HOLDINGS N.V.**

(Translation of Registrant's Name into English)

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**AerCap House, 65 St. Stephen's Green, Dublin 2, Ireland, +353 1 819 2010**  
(Address of Principal Executive Office)

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

Form 20-F

Form 40-F

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1):

**Note:** Regulation S-T Rule 101(b)(1) only permits the submission in paper of a Form 6-K if submitted solely to provide an attached annual report to security holders.

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7):

**Note:** Regulation S-T Rule 101(b)(7) only permits the submission in paper of a Form 6-K if submitted to furnish a report or other document that the registrant foreign private issuer must furnish and make public under the laws of the jurisdiction in which the registrant is incorporated, domiciled or legally organized (the registrant's "home country"), or under the rules of the home country exchange on which the registrant's securities are traded, as long as the report or other document is not a press release, is not required to be and has not been distributed to the registrant's security holders, and, if discussing a material event, has already been the subject of a Form 6-K submission or other Commission filing on EDGAR.

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**Other Events**

On September 27, 2018, the Board of Directors of AerCap Holdings N.V. (the “Company”) authorized an extension of the Company’s share repurchase program, previously announced on May 3, 2018, from September 30, 2018 to December 31, 2018.

The information contained in this Form 6-K is incorporated by reference into the Company’s Form F-3 Registration Statement File No. 333-224192 and Form S-8 Registration Statements File Nos. 333-180323, 333-154416, 333-165839, 333-194637 and 333-194638, and related Prospectuses, as such Registration Statements and Prospectuses may be amended from time to time.

**SIGNATURE**

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 authorized.

AERCAP HOLDINGS N.V.

By: /s/ Aengus Kelly

Name: Aengus Kelly

Title: Authorized Signatory

Date: September 27, 2018