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Whose Balance Sheet is this? Neural Networks for Banks' Pattern Recognition

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The balance sheet is a snapshot that portraits the financial position of a firm at a specific point of time. Under the reasonable assumption that the financial position of a firm is unique and representative, we use a basic artificial neural network pattern recognition method on Colombian banks' 2000-2014 monthly 25-account balance sheet data to test whether it is possible to classify them with fair accuracy. Results demonstrate that the chosen method is able to classify out-of-sample banks by learning the main features of their balance sheets, and with great accuracy. Results confirm that balance sheets are unique and representative for each bank, and that an artificial neural network is capable of recognizing a bank by its financial accounts. Further developments fostered by our findings may contribute to enhancing financial authorities' supervision and oversight duties, especially in designing early-warning systems.

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