

Spectral Structure and the Near-Linearity of Wage–Profit Curves: Evidence from U.S. Input–Output Accounts

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This paper investigates why the empirical wage–profit curve of market economies is strikingly close to linear – a robust stylized fact that contrasts sharply with the wide range of theoretically admissible shapes and with the nonlinear patterns emphasized in the capital theory debates of the 1960s and 1970s. Despite a growing literature, a comprehensive economic explanation remains elusive. We address this question by providing a characterization of the theoretical and empirical productive-structure features underlying nearly linear wage curves. Firstly, we derive the conditions for linear, hyperbolic, and approximately linear wage curves within a general family of linear production models. The analysis identifies parameter restrictions – expressed in terms of spectral properties of the input matrix and the alignment of key economic vectors – that constrain the curvature of the theoretical wage–profit schedule. Secondly, we evaluate these restrictions using the U.S. Benchmark Input–Output Accounts for 1977–2017 (over 400 sectors). We compute the relevant spectral parameters and examine whether the empirical productive structure satisfies the theoretical constraints associated with near linearity. Our results show that the empirical wage curve’s near linearity is driven by three robust structural regularities: (i) a close alignment between the labor vector and the left Perron–Frobenius eigenvector of the input matrix; (ii) a strong alignment between alternative numeraire vectors and the right Perron–Frobenius eigenvector – a novel finding in the literature; and (iii) a clustering of subdominant eigenvalues near zero. These regularities are remarkably stable across years, suggesting the existence of stylized facts in the productive structure of the U.S. economy. The findings help reconcile theoretical possibilities with observed wage curves and contribute to ongoing debates on capital theory and linear production models.