

# Estimation of Contract Schedules using Constrained B-Splines

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## **Abstract**

Most unionized teachers are paid according to a salary schedule (specifying wages as an increasing function of tenure and certification) explicated in contracts collectively bargained at the district level. With this in hand, teachers are able to infer their future potential wage trajectories at their own and other potential district employers. Lacking the physical contract faced by the teachers, an econometrician armed only with administrative data reporting actual wages in a given year must use some imputation techniques to deduce the wage structure. We explore the utility of natural Constrained B-Splines (COBS) to this end. COBS are an enhanced version of the traditional semiparametric splines technique enhanced by the ability to impose a monotonicity constraint on the resultant curve.