

Quasi-experimental estimates of class size effect in primary schools in Poland

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Abstract

In this paper we analyze class size effects in the case of primary schools in Poland. We use two empirical strategies to avoid endogeneity bias. First, we use average class size in a grade as an instrumental variable for actual class size. This allows us to control for within school selection of pupils with different abilities to classes of different sizes. Additionally, we estimate fixed effects for schools to control for differences between them. Second, we exploit the fact that there is an informal maximum class size rule. We estimate class size effect only for those enrollment levels where some schools decide to add a new class and thus dramatically lower class sizes. For such enrollment levels variance of class size is mainly exogenous and we argue that this allows estimation of quasi-experimental class size effects. In this case we again use average class size as an instrument with enrollment as a key control variable. Using both strategies we obtain similar findings. We found that the positive effects observed with OLS regression disappear when we use instrumental variables. If we avoid endogeneity bias, then class size negatively affects student achievement. However, this effect is rather small. We discuss methodology, possible bias of results and the importance of our findings to current policy issues in Poland.

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1. Introduction

Class size reduction is one of the most heavily discussed and controversial issues in educational debates all over the world. It is a popular policy proposal probably because of its simplicity. The common intuition is that in smaller classes teachers can devote more time to each pupil and it is easier for them to maintain order. Thus, intuitively, reduction in the average class size should improve student achievement. This makes class size reduction attractive to parents and policy makers. Additionally, teachers may prefer smaller classes because of a lower workload and a higher demand for their work. In countries like the United States or France the average class size is now much smaller than 30 yr ago. Some people argue that this expensive policy has no effect on student achievement, but others still regard class size reduction as cost-effective (Hanushek, 2003; Krueger, 2003).

However, in many countries class size reduction is not an issue. This is because of scarce resources or a greater focus on more politically relevant matters. In fact, one can easily imagine a situation where the average class size is growing because of budgetary cuts. It is also possible that governments prefer to invest in other school resources like teacher training, computers etc. Governments can decide to save funds for these investments by raising the pupils per teacher ratio. It is also possible that reforms of the educational systems can affect average class size without explicit intention to do so. The problem here is that when we do not know the effect of a change in class size on teaching quality, then the overall result of reform is hard to predict.

In Poland, class size reduction is not a widely recognized policy issue. Other problems and questions are more heavily discussed, especially the financial problems of local governments and their growing independence. The Polish educational system was decentralized in the 1990s and increasingly local governments more independently use their power to organize local school systems. Local authorities share the financial burden of the provision of primary and secondary education with the central government. In some places subsidies from the central budget are sufficient, but in others they are not. Many “gmina” (the lowest level of local government, which is responsible for primary education) spend as much as 50% of their budget on education and try to cut growing costs without any proper investigation or knowledge of how these actions influence the quality of teaching. In rural areas many local authorities close smaller schools to save money for other expenses.

In the beginning of the reform period in the 1990s, the Ministry of Education was supposed to establish so-called “educational standards” which were expected to regulate issues like maximum or minimum class size and the pupils per teachers ratio. However, such regulations have never been introduced. Additionally, in Poland there is no research that can be used as a reference point for decision makers. Discussion about educational standards is heavily influenced by the political battle between teachers’ trade unions and representatives of local governments. Only a few people concentrate on the quality of education rather than on the financial controversy alone. The aim of this study is to analyze the effect of class size to support public discussion with some data. This seems to be important because in the near future average class size could grow because of the financial problems of local governments.

The causal effect of class size on pupil achievement is empirically difficult to measure. Actual class size considerably varies between regions, cities, rural and urban areas.

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