



*Weighted Student Funding
for Primary Schools:
An Analysis of
the Dutch Experience*

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Abstract

In recent years, policy makers and educators in the U.S. have begun to show considerable interest in the concept of weighted student funding as a means of financing primary and secondary schools. Weighted student funding (WSF) has three main elements. Money follows students on a per student basis to the schools they attend, the per student amount of the funding differs with the educational needs of the student, and schools have the flexibility to use the money in whatever way they wish. Although a relatively new idea in the U.S., weighted student funding has a long history in the Netherlands. The Dutch program is impressive not only because many disadvantaged students bring with them almost twice as much funding as regular students, but also because the system has sustained political support over a long period of time.

Our analysis of the Dutch system shows that schools with high proportions of weighted students in the country's four big cities have access to substantially more resources than schools with few weighted students. In particular, the high weight schools have 57 percent more teachers per pupil on average as well as almost twice as many additional support staff per teacher. These additional resources notwithstanding, we find that weighted student funding does not assure equal quality schooling, which we take as the minimal goal of such a policy. In particular, the quality of education in the high weight schools, as measured by the standardized evaluations of the Dutch Inspectorate of Education, on average falls short of that in the low weight schools. This basic finding about school quality, as well as other considerations, suggests that although weighted student funding has the potential to generate some major equity gains over the current U.S. system of funding schools, it is not the "100 percent solution" as claimed by some of its U.S. supporters. Moreover, there is no guarantee that any significant movement in the direction of student funding in the U.S. would be accompanied by the highly progressive weights that are central to Dutch system.

Keywords: Weighted student funding, school choice, financing public schools, Dutch educational system, equity, progressive funding, immigrant students

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Introduction

In recent years, policy makers and educators in the U.S. have begun to show considerable interest in the concept of weighted student funding as a means of financing primary and secondary schools. Several major cities have adopted variations of weighted student funding (WSF), including Seattle, San Francisco and Houston. In 2006, a conservative think tank released a proposal to implement WSF on a broad scale with a long list of signatories, including three former U.S. Secretaries of Education. The proposal describes WSF at the “100 percent solution” to the funding challenges facing U.S. schools (Fordham Institute, 2006)

Weighted student funding (WSF) has three main elements. Money follows students on a per student basis to the schools they attend, the per student amount of the funding differs with the educational needs of the student, and schools have the flexibility to use the money in whatever way they wish. Such an approach appeals to conservatives in the U.S. who see it as a way to promote parental choice and school autonomy, and to progressives who favor a more equitable funding system than the current U.S. system and who are particularly attracted by the call for differentially more money for challenging-to-educate students.

Although a relatively new idea in the U.S., weighted student funding has a long history in the Netherlands. This country of about 16.5 million people has been using a system of weighted student funding to finance all its primary schools (serving children from age 4 to 12) for almost 25 years. The Dutch program is impressive not only because many disadvantaged students bring with them almost twice as much funding as regular students, but also because the system has sustained political support over a long period of time. Somewhat surprisingly, there has been little or no analysis of the Dutch program in either the Dutch or the English literature. This paper helps to fill this gap.

More specifically, we examine the Dutch system of weighted student funding with the ultimate goal of determining what lessons, if any, it might offer for the United States. In the first section we highlight some of the unique features of the Dutch education system, features that differentiate it in important ways from that of the U.S. or other countries. We then establish the goals against which the Dutch program of weighted student funding can be evaluated and provide a detailed description of the program as it operated between 1985 and 2006. In the following section, we examine the patterns of resource differences across schools grouped by their proportions of weighted students, with the first part focusing on financial resources and the second on teachers and other personnel. We then evaluate the extent to which the differential access to resources is sufficient to offset the challenges facing the schools with many weighted students. With specific reference to the 2006 changes to the policy, we address in the penultimate section the sustainability of the program, and in the final section we sketch some implications for the U.S.

Our analysis shows that despite the fact that the Dutch program of weighted student funding is somewhat less transparent than it first appears, schools with high proportions of weighted students in the country's four biggest cities do indeed have access to substantially more resources than schools with few weighted students. In particular, the high weight schools have 57 percent more teachers per pupil on average as well as almost twice as many additional support staff per teacher. These additional resources notwithstanding, however, we find that weighted student funding does not assure equal quality schooling, which we take as the minimal goal of such a policy. In particular, the quality of education in the high weight schools, as measured by the standardized evaluations of the Dutch Inspectorate of Education, on average falls short of that in the low weight schools. We speculate that the shortfalls reflect lower teacher quality in the high weight schools as well as the general difficulties of educating large concentrations of disadvantaged students, especially if the mix of students is in flux. This basic finding about school quality, as well as other considerations, suggests that although weighted student funding has the potential to generate some major equity gains over the current U.S. system of funding schools, it would not be the "100 percent solution" to this country's school funding challenges. Moreover, there is no guarantee that any significant movement in the direction of student funding in the U.S. would be accompanied by the highly progressive weights that are central to Dutch system.

Background on the Dutch Education System

The Netherlands differs from most other developed countries, including the United States, in its long history of letting parents choose schools for their children, with full public funding for all schools, including religious schools.¹ Moreover, the country is strongly committed to the concept of "freedom of education." For parents, this concept has been interpreted as a Constitutionally protected right to enroll their child in a publicly funded school that matches their family's values, even if that means joining with other parents to start a new school. For schools, it translates into significant operating autonomy. As a result of these policies, only 30 percent of the students now attend what in the U.S. we would call traditional public schools. The other 70 percent attend schools operated by religious boards or by boards offering a specific type of educational program. In return for their public funding, these "private" schools are subject to the same accountability procedures as the regular public schools. Accountability in the Dutch context is based on a school inspectorate system, the procedures of which we explain further below.

By international standards the Dutch education system appears to be quite effective. The country devotes a relatively small share of its GDP to education, yet its students outperform students in many other developed countries, including the U.S., on international tests such as PISA and TIMSS. Moreover, Dutch students whose mothers

¹ For general background on the Dutch system, see Ritzen, Dommelen and Vijlder, 1997; Ministry of Education, Culture and Science, 2007a and 2007b.

have limited education do better on PISA tests than comparable students in other OECD countries.²

As is true in all developed countries, however, some groups of students in the Netherlands lag behind other groups in terms of their educational achievement and attainment. The Dutch put a high value on equality in many areas of life, and, in particular, on not letting identifiable groups lag behind other groups. For many years, the main group about which Dutch policy makers were concerned was native Dutch students whose parents have limited schooling and work in low-skilled occupations. With the influx of immigrants to the Netherlands in the 1960s and 1970s, concern expanded to include the children of immigrants. The largest immigrant groups are guest workers from Morocco and Turkey who were initially invited to come to the Netherlands with the expectation they would not stay but who subsequently brought their families, and immigrants from the former Dutch colonies of Surinam and Antilles. These groups have been augmented in recent years by the arrival of asylum seekers from countries such as Somalia, Iran and the former Yugoslavia.

For the past 25 years, the Dutch have been addressing educational disadvantage with three strategies. One strategy is the system of weighted student funding through which the central government provides funding to primary schools on a per pupil basis but with the amount per pupil differing by the educational disadvantage of the group to which the student belongs. A second focuses on the social context of the students and operates largely through the municipalities. Because the municipalities have responsibility for a broad set of social services related to youth development, they are considered to be in a better position than the central government to address some of the out-of-school challenges facing disadvantaged youth. Among the programs they support are pre-school programs for children aged 2 ½ to 4 year olds and “extended” or “community schools” that provide enrichment activities for disadvantaged pupils.³ The third strategy focuses specifically on language development and multiculturalism and is a response to policy concerns related to immigrants. The nature and size of the latter two strategies have varied over time depending on the political landscape, with the progressive parties typically supporting a stronger role for the municipalities than the conservative parties. In contrast, the system of weighted student funding has maintained consistently strong support, at least in principle, from all the major political parties over time.

Weighted student funding for primary schools was introduced as part of the Educational Priority Policy of 1985 that also included a program component that focused on more contextual issues. Between 1985 and 2006, the additional weight attached to native Dutch children whose parents have low education was 0.25 and the additional weight for disadvantaged immigrant children was 0.90. The only change during that period was the 1993 tightening of the definition of low parental education for native Dutch pupils to make it apply to both parents, not just to one. In 2006, the system was

² http://nces.ed.gov/timss/results03_fourth03.asp and <http://pisa.acer.edu.au>.

³ Technically, compulsory schooling starts at age 5, but any child may start school on her fourth birthday and most do.

changed in more fundamental ways that are discussed in the penultimate section of this paper. Because of those changes much of the data presented below refers to the school year 2005/06, the last year before the phasing in of the modified system. In addition, we focus much of the analysis on the country's four biggest cities, Amsterdam, Rotterdam, The Hague and Utrecht where the presence of immigrants poses educational challenges more similar to those faced by U.S. cities than is the case in much of the rest of the country.

Excluded from our analysis is attention to the many schools that serve children with special needs and also the whole secondary school sector. In contrast to the situation in the United States, the Dutch are only now attempting to move significant numbers of students with special needs into regular schools. For a child in a regular school who is formally identified through an external process as having special needs, the central government now provides financial assistance to the school specifically to address the needs of that individual child, but most pupils with special needs are still in separate schools. At the secondary level, students are tracked starting at age 12 into different types of programs or schools, some of which are designed to prepare students for university and others for vocational programs. This early tracking and the complexity of the Dutch system of secondary schools renders it difficult to draw general lessons for the U.S. at that level.

Goals of the System of Weighted Student Funding

As we have noted, the system of weighted student funding is one part of a larger policy strategy designed to combat educational disadvantage of identifiable groups of students. Despite the relative clarity of this overall goal, the goal for the WSF component is less clear. This lack of clarity has been pointed out not only by academic research on the Education Priorities Policy (Mulder, 1966) but also by official reports.⁴ The ambiguity of the goals, notwithstanding, it is important for us to be reasonably explicit about the goal or goals so that we can examine whether the program is working.

Main goal

For the purposes of our analysis, we understand the main goal of weighted student funding to be the promotion of equal quality schooling across schools. Conceptually, equal quality schooling would mean that a student with any given ability, motivation and family background would achieve equally well in a school with a disproportionate number of educationally disadvantaged students as in a school with few if any disadvantaged students. There is no presumption here that all students should or would end up with the same level of achievement or even that average levels of achievement would be similar across schools. Even if all schools were equally effective, average outcomes would differ across schools whenever there were concentrations of high ability

⁴ In 2001, at the request of the lower house of Parliament, the Netherlands Court of Audit reviewed 35 studies evaluating the effectiveness of the policies designed to combat educational disadvantage. The Court concluded that the studies, though technically sound, generated little information about the effectiveness of the policy in part because the objectives of specific components were unclear (Rekenkamer, 2001).

students from advantaged families in some schools and concentrations of low ability students from educationally disadvantaged families in other schools. In one sense equalizing school quality might be interpreted as a minimum goal; a more ambitious goal would be for the schools serving disadvantaged students to be higher quality than other schools.

The promotion of equal quality schooling for all students is the logical extension of the earlier Dutch commitment to equal funding of public and religious schools that emerged from the political struggle that generated the 1917 Constitutional agreement for the national government to fund private schools at the same level as public schools. Historically, rich and poor students often went to the same schools, albeit some schools served only Protestants and others only Catholics. The secularization of the Dutch society during the 1950s and 1960s gradually reduced the role of religion in school choice. That trend, combined with the influx of uneducated immigrants in the 1970s into the country's cities, has gradually created systems of schools in the country's largest cities that are very segregated by educational disadvantage (Ladd, Fiske & Ruijs, 2009). With segregation of that type, equal funding of schools cannot assure equal quality because some schools have far higher proportions of challenging-to-educate students than others. Only with additional resources would the schools serving large numbers of such students have sufficient resources to meet the needs of all of its students.⁵

To the extent that the program does indeed promote equal school quality, it would also narrow achievement gaps between advantaged and disadvantaged students. But that outcome would reflect the improvement of overall school quality in schools serving disproportionate shares of disadvantaged students relative to other schools, not necessarily the improvement of disadvantaged students relative to advantaged students within a particular school.

Other possible goals

To be sure, many Dutch policy makers undoubtedly view closing achievement gaps as the main goal of weighted student funding. From that perspective, the justification for giving schools with many educationally disadvantaged students additional funding is that it enables them to devote more attention to those students and thereby to raise their achievement. Consistent with that view is that both the initial weights and the subsequent policy discussions to change them were based on studies examining the relationship between various family background characteristics and pupil achievement. Because the achievement of disadvantaged immigrants was substantially lower than that for other groups, for example, policy makers believed it made sense to give them the highest weights.⁶

⁵ This approach is most directly analogous to the concept of vertical equity in the discussion of U.S. school finance. See Baker and Green (2008); Downes and Stiefel (2008); Ladd (2008).

⁶ Interview with Geert Driessen (3/3/2009) about his early 1980s study; Bosker, Mulder and Glas (2001)

We do not treat this alternative as the central goal of the Dutch program for two reasons. The first is that nothing in the design and implementation of the Dutch program suggests that the extra money occasioned by the student weights is to be used exclusively for the students to whom the weights are attached. Until 2006, the national government allocated funds to schools in separate pots, the largest of which was for personnel spending, and since then in the form of a single lump sum over which the schools have full control. This approach differs significantly from compensatory programs in other countries, including the United States, where the Title 1 compensatory education program is directed, by law, to the eligible students, and not, except in some cases, to the school as a whole.⁷ Moreover, the inclusion of a threshold provision (see below) means that in practice there are no additional funds for a significant proportion of students who have weights associated with them.

A second reason for downplaying this goal is that, as we have mentioned above, the Dutch do not rely on the program of weighted student funding alone to address achievement gaps (Driessen and Dekkers, 2008). Other programs such as pre-school programs for 2 1/2 to 4 year olds, language programs, and various out of school enrichment programs are designed to address the well known fact that achievement gaps emerge well before children enter formal schooling and reflect differential family situations and access to pre-school opportunities, that opportunities outside school differ as children progress through school, and that children of low SES and non-Dutch backgrounds enter school with less command than other students of the Dutch language. Thus, by their policy choices, Dutch policy makers implicitly acknowledge that their system of weighted student funding must be combined with a variety of other social interventions related to youth development to address the challenge of educational disadvantage. Although it makes sense to evaluate the overall set of policies directed toward disadvantaged pupils in terms of their success in reducing achievement gaps, we think it is less appropriate – and also a bit unfair -- to evaluate the school funding component alone by that criterion.

A third potential goal of weighted student funding has received significant attention in the U.S. discussion, but, as far as we can tell, plays virtually no role in the Dutch context. According to U.S. proponents of weighted student funding, such a funding system would promote the integration of schools (Fordham, 2006). The argument goes as follows. To the extent that schools have some say over which students they enroll (which in most cases is not technically allowed in the U.S., but undoubtedly often occurs), many schools serving middle class students would have little incentive to enroll students who are costly to educate. If such students brought with them enough public funding to cover the higher costs of educating them, however, some of those schools might be more willing to enroll them. Of course, the school obtains no financial advantage from accepting such students unless the additional funding they bring exceeds the additional costs to the school of educating the students and, perhaps more

⁷ Under the Title I program of the U.S. Federal Elementary and Secondary Education Act, money is directed to districts and schools based on child poverty rates. The money has traditionally been targeted to specific groups of students within the schools but over time Congress has permitted school wide use of funds in schools meeting various poverty thresholds (Gordon, 2008).

importantly, does not adversely affect the reputation of the school. Our interviews with school officials in The Netherlands suggest that their enrollment decisions are not in general influenced by the amount of extra funding a student brings with them. At the same time, though, the schools clearly have strong incentives to maximize the funding from whatever students they do enroll. They do that in some cases by not letting parents claim high levels of education without proof.

What is Weighted Student Funding?

Viewed from afar, the Dutch system appears deceptively simple. About 90 percent of the funding for the country's 7000 primary schools is provided by the central government on a weighted per pupil basis. Between 1985 and 2006 four categories of students were identified as deserving of additional weights for the purposes of school funding. The two major categories were native Dutch students whose parents have little education, and disadvantaged immigrant children from non-Western countries, including but not limited to Moroccans, Turks, Surinamese and Antilleans, whose parents have limited education or work in low-skilled occupations. As we noted earlier, the additional weight attached to the low educated Dutch was 0.25 and to the immigrants was 0.9. The other two categories are small and receive little attention in this analysis.⁸

The top part of Table 1 provides information on primary schools, pupils, and pupils by weight for three geographic areas, the four big cities, the rest of the country and the country as a whole. The table shows that the four big cities account for slightly less than 10 percent of all schools and slightly more than 10 percent of all pupils and that they differ in significant ways from the rest of the country. Of most interest for this study is that the percentage of 0-weighted students is far lower in the big cities (50.4 percent vs. 80.8 percent in the rest of the country) and the percentage of 0.9 students is far higher (42.9 percent versus 8 percent). Moreover, the low-educated native Dutch (the 0.25 students) are underrepresented in the big cities compared to the rest of the country. We return below to the information in the bottom part of the table.

Weighted students vs. weighting index for schools

Based on the student weights, we have constructed a weighting index (WI) for each primary school as follows:

$$WI_i = (N_i + \sum_j(n_{ij} w_j)) / N_i$$

⁸ During the period of our analysis, the 0.25 students are those for whom both parents (or the single parent if there is only one) have a maximum education of lower vocational education. Disadvantaged immigrants are first and second generation immigrants from a non-Dutch cultural background who meet one of the following criteria: the mother or the father has a maximum education of lower vocational school or the parent with the highest salary has a job in which he does manual or unskilled work, or does not have a job. Additional weights of 0.4 and 0.7 apply to the children of shippers who live away from their families and to children who live in caravans.

where N_i is the total students in the school, n_{ij} is the number of students in school i with additional weight j , and w_j is the j th weight. This weighting index ranges from 1 for a school with no students with extra weight up to a maximum of 1.9 for a school in which all pupils have an extra weight of 0.9. Thus, one can interpret this school weighting index as one plus the average additional weight of the school's students. In the absence of any program complications, the school weighting index would also be an index of funding. A school with an index of 1.45 in that case, for example, could expect to receive 45 percent more funding per pupil than a school with an index of 1. As discussed further below, however, a number of provisions keep that from being the case.

Table 2 documents how students are distributed among schools grouped by their weighting index, for the big 4 cities and for the country as a whole. The WI categories are in increments of 0.1 on the 1.0 to 1.9 scale. Of most interest are the patterns for the big 4 cities at the top of the table. The table shows first that about 25 percent of all primary school students in those cities are in schools in the lowest WI category and about 27 percent are in schools in the top two WI categories. As shown by the percentages of students by school WI category, almost 95 percent of the pupils in the low WI category have no additional weight and this percentage declines monotonically across the weighting categories to five percent in the highest category. Analogously, the percentages of students with a 0.9 weight increase monotonically across the school WI categories from 2.7 to 92.7 percent. In contrast to these patterns, the native Dutch students with the 0.25 weight tend to be most concentrated in the middle WI schools, reaching a peak of 14.3 percent in the schools with a WI in the range of 1.3 to 1.4.

The next panel depicts how students with different weights are distributed among the WI school categories. As can be seen, almost half the zero-weight students are in the first WI category and slightly more than half of the 0.9 students are in the top two categories. The fact that all of these patterns differ significantly for the country as a whole, as shown at the bottom of the table, is relevant for reasons we discuss below.

As we have already hinted, the funding system is more complicated than first meets the eye. The most important complications are the 9 percent threshold and the role of school boards.⁹

The 9 percent funding threshold.

The original proposal for weighted student funding that emerged from a government financed study of possible weights in the early 1980s recommended a single weight of 0.15 for students with parents having little education.¹⁰ For a variety reasons,

⁹ We thank Joop Gross at the Dutch Ministry of Education for his detailed explanation of how the system works. Two other complications are worth noting. First is that the funding for each school is the sum of four components (personnel, board management, professional development, and materials), with slightly different applications of the weighting formula to each component. Second, some schools have multiple locations (which in some cases are quite different schools), but the funding calculations are done at the level of the school, not that of the location.

¹⁰ Interview in Nijmegen (3/3/2009) with Geert Driessen, one of the authors of that study. This study examined the relationship between student achievement and family background, including the education

including rising concern about the status of immigrants, however, policy makers decided to add a new weight category of 0.9 for children of non-western immigrants with low education and to increase the weight for native Dutch working class students to 0.25. These changes meant the cost of the program would far exceed the planned budget. Hence, policy makers had to find a way to reduce the budget while maintaining the politically desirable weights.

Their solution was to introduce a threshold of 9 percent below which schools receive no extra funding based on the weights. They justified this threshold on the ground that schools can cope with the challenge of educating disadvantaged students provided they are limited in number. Instead of defining the threshold as the proportion of a school's students who have non-zero weights attached to them, however, the new provision was defined in terms of full time equivalent students. Consider a school with 200 students, for which the threshold would be 18 students. To receive any additional funding, the school must have at least 20 students with a 0.9 weight or the much larger number of 72 students with a 0.25 weight, or some combination of the two types of students. Moreover, the additional funding applies only to the number of students above the threshold, not to all the weighted students.

Thus, a school with a WI of 1.09 would receive no additional funding, and one with a WI of 1.2 would receive additional funding based on the net index of 1.11. Returning to the bottom panel of Table 2, we see that this provision has significant implications for the funding of Dutch students who carry the 0.25 weight. For the country as a whole almost half of such students are in schools with a WI index between 1 and 1.1, which means the schools would receive virtually no additional funding. Another 26 percent attend schools in the 1.1 to 1.2 WI schools. Such schools would receive some additional funding, but in the range of 2 to 11 percent more than schools with a weight index of 1 rather than the 10 to 20 percent more that would be suggested by the Weighting Index. Thus, in the country as a whole, three out of four native Dutch pupils with poorly educated parents attend schools that receive little or no additional funding from the program of weighted student funding. In contrast, about 46 percent of the disadvantaged immigrants (those with the 0.9 weight) are in schools with a WI above 1.5 and therefore receive significant additional funds. These patterns clearly indicate that the 9 percent threshold favors the big cities relative to the rest of the country and the schools with disadvantaged immigrants relative to those with disadvantaged Dutch students.

We note here that when the weights were modified in 2006, the funding threshold was reduced to 6 percent, a change that affects one part of our analysis below.

The role of school boards

A second complication arises from the fact that all schools are run by school boards, with the boards, not the schools, being the legal entities entitled to receive government funds. Thus, even though funding is calculated at the school level, the money

level of the parents and type of occupation. The study did not look at income, which is considered a private matter and is not easily discussed in the Netherlands.

goes to the school boards, not directly to the individual schools. Describing the school boards is not easy given their diversity. Perhaps the most important point is that the Dutch schools boards differ in some significant ways from U.S. school boards.

One difference reflects the diversity of school types in the Netherlands. A single city contains not only public schools run by one or more school boards, but also various types of religious schools and schools that offer special programs. Section III of Table 1 documents the distribution of students by school type in 2005/06. Both in the big cities and throughout the country, more than 85 percent of the primary school pupils attend schools that are public, Catholic or Protestant. The other pupils attend schools that offer special educational programs, such as Dalton or Montessori, or that are run by other religious groups, such as Muslims or Orthodox Protestants. The table shows that with 39 percent of the pupils, public schools are overrepresented in the big cities relative to the rest of the country and that Catholic schools are underrepresented, which reflects the historical fact that Roman Catholics were most prevalent in the southern part of the country. Importantly, even public schools offer a variety of special educational programs, including for example Montessori programs, which means, for example, that some Montessori schools are public schools and some are not. Within the category of “other schools” in the four big cities are 13 Islamic schools and 5 Hindu Schools.¹¹

School boards are organized by type of school, but within each type there can be multiple boards within a city. Amsterdam currently has close to 40 boards. Rotterdam is more centralized, with one public school board responsible for all 66 public primary schools and 23 other boards. School boards that operate a single school are most common in the special program and “other” categories.¹² As of 2005/06, more than half of those two types of schools in the four big cities were run by single-school boards. Section IV in Table 1 describes how schools are distributed by size of school board in the big cities and in the rest of the country. Within the big four cities, about two thirds of the schools are run by large boards, many of which are public school boards.

Until 2006, the municipal governments themselves -- or, as in Amsterdam, regional subdivisions of the municipal government -- served as the school board for the public schools. At the same time, though, the municipal governments also had responsibilities that extended to all schools in the city, not just the public schools. For example, they were responsible for providing school facilities and distributing money for pilot programs or other programs such as pre-school programs. To counter the incentives for municipal governments to favor their own schools over other types of schools, national law required that they treat all schools equally. Thus, any money that a municipality gave to its public schools had to be matched by an equal amount for the other schools. As part of the national policy changes in 2006, this potential conflict of interest was eliminated by making the public school boards independent of the municipal governments. That means the municipal governments no longer have direct control over

¹¹ For an analysis of Islamic schools in the Netherlands, see Driessen and Merry, 2006.

¹² In the table, the number of boards with a single school may differ slightly from official figures because we count here a board as having a single school if it has only one school in the specified city even if it is also responsible for one or more schools in another city.

any schools. Instead, all types of schools are equivalent in the sense that they are all run by boards, the members of which, as far as we can tell, are self-sustaining and not elected. The large boards hire professional general managers and typically have professional staff who work with the schools on issues related to human resources, facilities, and specific problems.

Thus the boards serve as intermediaries between the central government and the schools. Exactly how they operate is hard to determine, and, as far as we know, has not been studied in any systematic way. Boards differ, for example, in the extent to which they pass the central government funds to the schools in line with the student weights, how much they skim off the top to cover their own expenses, or how much they redistribute funds among schools. In addition, the size and variation of board reserves, which would give some boards more funding flexibility than other boards, differs across boards.¹³ The best we can do is to supplement our analysis of financial data and information on teachers and other school employees, with information from a few controllers of school boards. Before doing so, we pause to look briefly at the differences among the four big cities.

The four big cities

In Table 3, the four cities are listed by their size. Amsterdam is the largest with its more than 56,000 pupils in primary schools, and Utrecht is the smallest with its 22,000 pupils. All four cities have high proportions of weighted students, with Rotterdam at the top. Almost half of the pupils in that city are disadvantaged immigrants who carry a 0.9 weight and another 9.2 are educationally disadvantaged native Dutch with a weight of 0.25. All types of schools are represented in each city, with public schools more common in Amsterdam than in the other cities, and Roman Catholic schools most common in Utrecht. With respect to the size of school boards, Amsterdam differs from the other three cities by having far more students in schools run by medium-sized boards.

The patterns by school weighting index at the bottom of the table show that each city has schools spread throughout the range of school weighting indices, but that the patterns differ across the four cities. The percentages of students in the bottom three categories (those with the most advantaged students) range from about 35 percent in Rotterdam to a high of 63 percent in Utrecht. Correspondingly, Utrecht has the smallest proportion in the top 3 categories (those serving the most disadvantaged students) with about 24 percent, and Rotterdam has the highest with about 49 percent.

In the following sections we address two main sets of issues. In the first, we document the extent to which the resources in the high weight schools exceed those in the low weight schools, with resources measured in terms of money, teachers and support staff. In the second, we test whether the additional resources are sufficient to meet the goal of a level playing field. For most of the analysis we aggregate data for the four

¹³ The issue of differential reserves across boards has recently become a political issue and is currently the topic of a special commission. (Interview with Mike van den Tillaart (2/13/2009)).

cities, but we also check for different patterns across them and also across schools by type, and size of their boards.

Funding and Teaching Resources by School Group

Our analysis of resources is based on a variety of administrative data sources and, by necessity, is not as clean as we would like. With respect to weighted student funding, we have information on the money the national government gave to the relevant boards on behalf of each specific school rather than on the actual amount the board passed through to each school. For other revenue, including that from local municipalities and parental fees, we have data only at the board level. The best school-specific information is for personnel.¹⁴ Nonetheless, the overall picture is very clear: the high weight schools have access to substantially more resources than the low weight schools.

Allocations of weighted student funding by school

Until 2006, funding for schools under WSF was separated into three pots, the biggest of which was for regular personnel. The schools were free to reallocate funds within each category but not across categories. As part of the changes in 2006, the funding is still calculated based on categories (regular personnel, other personnel including professional development, board management, and material), but is now given to school boards as a lump sum with no presumption that money be spent on one category rather than another. Because of this change, the central funding agency has significantly changed its computer system for distributing money, and, as a result, was not able to give us financial data for any year prior to 2007/08, the first year under the new system.

The change from funding categories to lump sum is potentially more consequential than it first appears. The reason has to do with teacher salaries. In the Netherlands, all teachers are paid based on a national salary schedule, with higher pay for teachers with more years of experience.¹⁵ Under the old system of funding schools were in fact allocated not money but rather teacher slots based on their weighted students. The central government then provided enough funding for each board to pay the actual teacher salaries. As a result, schools with higher proportions of experienced teachers would generate more money than other schools, all else held constant. Under the new system, the funding calculated for each school is intended to be based on a national average teacher salary. That change, however, creates potentially serious problems for schools (and their boards) that for historical reasons have a lot of older, and hence more highly paid, teachers. In order to ease the adjustment problems, the government is

¹⁴ Somewhat surprising (to us at least) there appears to be almost no research on the extent to which resources – as measured either by money or personnel -- in the high weight schools exceed those in the low weight schools. Our analysis is based almost exclusively on data provided to us by the Central Agency for the Financing of Schools (CFI). All the data we use are public and are available on the web for specific schools and school boards.

¹⁵ Until quite recently, the salary schedule reached a maximum after 18 years of teaching, but now that period has been shortened to 15 years.

currently phasing in the movement to full lump sum funding by providing additional funds for schools with many high paid teachers. How long the adjustment period will last is unclear. Although this issue has not received a lot of attention in the Netherlands, we highlight it here because it strikes at the heart of debates about lump sum funding in the U.S. and elsewhere.¹⁶

Figure 1 reports the patterns in these funding allocations across schools grouped by their 2007/08 weighting index both for the total amount and for the largest component, the amount for personnel.¹⁷ Even though the personnel component can be used for other purposes we include it in the figure so that its growth can be compared to the growth in teachers in a subsequent figure. This figure is based on funding allocations for 582 schools which includes all schools in the four large cities other than those with fewer than 50 students.¹⁸ It depicts the funding allocations in each WI category as a percentage of the funding allocation in the lowest or base category in which WI is between 1 and 1.1. In that category, the average of total lump sum funding per pupil is €3661 and of personnel funding is €2742

The figure shows, as expected, that the per pupil funding allocations increase monotonically across schools in line with their weighting indices. In particular, the schools in the highest weight category are allocated on average 74 percent more total funding per pupil than the schools in the base category, and 79 percent more funding within the personnel component. The larger increase for the personnel component reflects the fact that the funding formula for that component is more sensitive to the number of pupils than are the formulas for the other components of the lump sum. We note that both differentials are likely to exceed by about three percentage points those that would have emerged prior to the 2006 reduction in the threshold from 9 percent to 6 percent. Nonetheless, the bottom line is very clear: The high weight schools are allocated far more funding than the low weight schools.¹⁹

As we noted earlier, we do not know how much of these school-specific allocations the boards pass through to the specific schools for which the funding was

¹⁶ For further discussion of these issues, see Fiske and Ladd (2000) discussion of bulk funding in New Zealand in Fiske and Ladd (2000) and discussion of the purported benefits of weighted student funding in Fordham Institute (2006).

¹⁷ These 2007/08 weight indices differ slightly from those for the year 2005/06 both because of small changes over time in the mix of students in each school and, more importantly, because of the phasing in of new weights starting in 2006. As described later, the new weights make it possible for some schools to have a weight index slightly above 1.9 which is why we have labeled the final category in this figure > 1.8 rather than 1.8 to 1.9.

¹⁸ We eliminated the two schools with enrollment under 50 students because they are technically too small to be operating and are subject to being shut down.

¹⁹ In the context of a regression model in which the dependent variable is the funding allocation per pupil for each schools and the main regressors are the school weighting indices, we have extended the analysis by adding control variables for city, school type and board size. The addition of these control variables generates essentially in the patterns across the school WI categories. They do provide some evidence, however, that the Roman Catholic and Protestant schools are allocated slightly less funding per pupil, but the difference is very small (less than € 200). It is unclear why this pattern emerges. It remains even after we control for school size with the addition of a variable specified as the logarithm of pupils in the school.

calculated. Based on a limited number of interviews with school boards in Amsterdam, we know that most of it is passed through but that boards differ in their policies. One public school board, for example, passes on to each school 90 percent of the regular personnel component, 45 percent of the “other” personnel component, and 85 percent of the material component. It retains the rest to cover collective costs such as information technology, insurance, replacements for disabled teachers, and training of school principals. Another public school board in charge of schools in a less well off part of the city retains about 6 percent off the top, again with the highest percentage from the “other personnel” component. A Catholic board, in contrast, takes 4 percent off the top for overhead expenses and also redistributes 17 ½ percent of the “extra” funds – that is those that are allocated to specific schools based on their students with non-zero weight – away from those schools and gives it to the low weight schools within the board. This policy reflects that board’s view that the national policy gives too much money to some schools and too little to others.²⁰

Other forms of revenue by school board

By far the largest amount of revenue received by the school boards comes from the central government, and primarily in the form of weighted student funding.²¹ In addition to that revenue, however, the boards also receive some funding from their local municipalities, or related agencies, as subsidies for specific programs and from other miscellaneous sources.²² The money from the local municipality sometimes is given on behalf of all schools and sometimes is based on applications or the aggressiveness of the board in obtaining it. Funded with such money are activities such Dutch language programs, gymnastics teachers, and enrichment activities for disadvantaged students. Miscellaneous other revenue includes fees from parents, gifts, rental income for facilities such as gymnasiums, and private sponsorships.

We are interested here in the extent to which such additional funding reinforces or counters the funding patterns observed in Figure 1. Unfortunately, it is not possible to allocate these other revenue sources to specific schools. Hence our strategy is first to calculate an average weighting index (weighted by school size) for each board based on all the schools operated by the board, and then to look at the municipal and “other” revenue as a share of the revenue from the central government for the boards grouped by their weighting index. A few cautionary notes about this analysis are needed. First and

²⁰ Interviews with Martijn Stormessand (2/23/2009); Rene Richter (3/11/2009) and Hans Moerbeek (6/4/2009)

²¹ In addition to the weighted student funding, the central government provides small amounts of funding for categorical programs. National data for the years 2005 and 2008 indicate that the additional funding augments the basic funding by less than 1 ½ percent. In addition, for the past several years, the central government has also been providing the boards with some additional funding for addressing disadvantage that previously was given to the municipalities (Information provided by the Ministry of Education, Culture and Science).

²² The governmental structure differs across the four cities. For example Rotterdam is quite centralized but the Amsterdam has decentralized many government responsibilities to 14 geographically defined local units (*stadsdelen*).

most important is that an average weighting index for a board hides some significant variation across schools within some boards. The weighting index for a board translates most readily to a school weighting index for boards that have only one school or that operate schools that are relatively similar in terms of their weighting indices. Other cautions are that the necessary financial data are missing for 6 boards, including the large municipal board in Rotterdam, that minor complications arise for boards that operate schools in more than one city, and the relevant spending patterns jump around a bit from year to year. The total sample size is 99 boards, with as few as four boards in one of the board WI categories (category 1.2 to 1.3).

Figures 2 and 3 depict the patterns of revenue shares for 2006 and 2007 in relation to the school board weighting index for the year 2006/07. The local government share reaches a peak of 12 percent of central government revenue in 2006 and about 9 percent in 2007, which in both years is about twice the share in the lowest weight boards. Setting aside drop in the 1.2 to 1.3 category (which is based on only a few boards) and the inconsistencies across the two years, we conclude that the share is generally rising. This pattern in turn suggests that the high weight schools (which are disproportionately represented in the high weight boards) benefit differentially not only from funding from the central government but also from funding from the municipal government..

The other two lines in figures 2 and 3 tell a different story. They indicate that as a share of central government revenue, the “other” revenue accruing to schools in the low weight boards – at least in the bottom two groups -- is far greater than in the high weight boards. Part of this revenue comes from school fees. Most of the primary schools charge some fees, but the yearly fee is generally low and in the range of €25 to €60. In a few schools, however, the fees exceed €500.²³ Additional revenue comes from renting out facilities such as school gymnasiums and from gifts and sponsorships. The patterns suggest that the low weight schools are more able to obtain revenue from those sources than are the high weight schools. Taken as a group, these “other” revenue sources tend to offset at least to some extent the resource disadvantage that low weight schools face relative to high weight schools because of the system of weighted student funding. At the same time, revenue from these “other” sources is not likely to be used for core educational purposes such as the hiring of teachers. Instead they are most likely used for enrichment activities, and some is undoubtedly used to pay for the expenses of the facilities that generate the revenue. Thus, while the patterns are worth noting, they do not fundamentally alter the conclusion that, on average, the high weight schools have far more resources than the low weight schools.

²³ Comprehensive information on school fees is not readily available. The information cited here was provided to us from OCO, an organization financed by the Amsterdam city government to help parents understand their rights and to provide information on schools and school policies, and is based only on Amsterdam schools. In general public schools are allowed to charge fees only for extra curricular activities, but the fees are technically voluntary. A non-paying child can be prohibited from participating in the activity, but then the school has to provide an alternative activity at the school for that child. Non-public schools are allowed to charge fees, but most use the fee revenue for non-essential extras. Only a few of the schools use them to pay for extra teachers.

Teacher patterns by school weighting index

In contrast to the funding data, the information we have on teachers and other school personnel is reported by the individual schools and hence represents the best information we have on resources. For this study we have information for the 2006/07 school year on teachers and various other personnel by school as reported to the central funding agency by the schools. Given the large role that spending on personnel plays in school budgets, this information provides an alternative means of determining the extent to which the resources in schools with high weighting indices exceed those in school with low weighting indices. In addition, it provides some insight into how schools use the additional resources.

As we noted above, until recently the funding for personnel was separated from that for other purposes and had to be used for personnel. Perhaps because of this separation, the general presumption among policy makers appears to be that schools used the additional money related to the weights primarily to hire additional teachers with the effect of reducing class size. That presumption appears to have been reinforced by early reports commissioned by the Ministry of Education, Culture and Science based on nationally representative samples in which schools indicated that much of the money was used to reduce class sizes.²⁴ That raised some concerns among policy makers given ongoing debates about the efficacy of small class sizes for increasing student achievement. As far as we know, however, no careful study has been made on how the extra resources have been used.

Our analysis of personnel patterns is based on two measures, both denoted in full time equivalents.²⁵ The first measure is the number of teachers per pupil, where teachers include not only regular classroom teachers but also those who work across classrooms in a school, such as remedial teachers and academic coaches (*interne begeleiders*). Although the inverse of the teacher pupil ratio -- namely, the number of pupils per teacher -- cannot be interpreted as the average class size in a school, differences across schools in this measure are undoubtedly highly correlated with differences in class size.

The second measure is the total support staff per teacher. Support staff includes all the adult employees, other than the principal and assistant principal in the school. Included in this group are assistant teachers, administrative support, and caretakers of the building.²⁶ As we document below, different types of schools make different tradeoffs between regular teachers and the use of support staff.

²⁴ Interview with Guuske LeDoux, University of Amsterdam (May, 2009). Also see Ritzen, Dommelen and Vijlder (1997), p. 331.

²⁵ Many Dutch workers, including teachers and support staff in schools, work only part time. Hence, the use of full time equivalents is essential for this analysis.

²⁶ Our data set identifies two categories of support staff (OOP and OPB), with the former referring more specifically to the academic support staff. Because our initial analysis of the two categories indicated that some schools may have defined the two categories in different ways, we report here only the results for the total support staff.

Analogously to Figure 1, figure 4 depicts, for all schools in the four big cities the average teacher pupil ratios relative to the average in the base WI category.²⁷ Hence, one can see from the figure that the schools in the highest weight index category have on average about 58 percent more teachers per pupil than do the schools in the lowest weight category. Even after taking account of the complications referred to earlier related to the interpretation of the 79 percent increase in personnel funding for the high weight schools (namely, that not all the money is passed through to the schools, and that it is based on a later year with a 6 percent threshold), we conclude from the smaller 58 percent increase here that not all the extra personnel funding is used to hire regular teachers –and thereby to reduce class sizes. Nonetheless, class sizes are undoubtedly far smaller in the high weight than in the low weight schools. The teacher pupil ratios on which the patterns are based translate into 19.2 pupils per teacher in the low weight schools and 12.2 in the high weight schools. If the different types of schools made similar use of remedial and other teachers, that would imply class sizes that are 58 percent bigger in the low weight schools than in the high weight schools.

Table 4 provides additional evidence on the patterns of teacher pupil ratios across the four cities, by type of school, and by size of board. The first two columns report the number of schools in each subcategory and the R² of school-level regressions of the form

$$T/P_i = a + \sum_j b_j WI_{ij} + e_i$$

where T/P_i is the teacher pupil ratio in school I , WI_j refers to the j th weighting index where j goes from the second to the top weighting index, and e_i is an unexplained error term. The entries in the table correspond to selective coefficients from that regression for different subsamples of schools, but in all cases we transformed them in order to highlight the average in the specified category relative to that as given in the lowest weight category (that is, the parameter a) for all schools in the big four cities. Consistent with Figure 4 the entry for the highest weight category for all schools in the big 4 cities is 1.577. Note that the variation in the school weighting categories accounts for 64 percent of the variation in the teacher pupil ratio across the 579 schools in this analysis.

Although the city-specific entries in Table 4 show some differences across cities, most of the differences are not very large. In Amsterdam, all the entries except for the last one are somewhat higher than the 4-city average but in Rotterdam they are all somewhat lower. Of interest, though, is that in every city, the patterns by school WI rise almost monotonically, with the highest WI schools employing at least 55 percent more teachers than a typical low weight school in each of the 4 cities.²⁸ We conclude from these patterns that additional funding in the high weight schools does indeed make it

²⁷ For this figure and Table 4 on which it is based, we use as the 2005/06 weighting indices. These are the weight indices that determine the basic funding for the 2006/07 school year. We note, however, that some additional funding is provided to schools that experience a large increase in students during the year, which could potentially justify using the weighting indices for 2007/08. The major advantage of using the 2005/06 weights is that they are not contaminated by the 2006 change in weights. Note that the patterns are similar for both sets of weights with the explanatory power slightly higher for the 2005/06 weights.

²⁸ The pattern in Utrecht diverges the most from those in the other cities, but even that pattern cannot be distinguished statistically from those in the three other cities.

possible for those schools to have significantly smaller classes than the low WI schools. Moreover, the patterns are quite similar, but not identical, across the four cities.

More interesting are some of the differences in the patterns by school type and size of board in the bottom half of the table. The patterns for the three major types -- public, Roman Catholic, and Protestant—are almost identical. Quite different, however, is the pattern for the 84 schools in the special program and “other” category. For that group, which ranges from Islamic schools to elite schools offering quite specialized programs, the low weight schools have about 6 percent more teachers per pupil than the average for the big 4 cities for that category and there is far less evidence that the schools with high weights use large proportions of their additional funding for teachers. A similar pattern emerges for the schools in boards that operate only one school board – about half of which overlap with the schools in the special program and “other” category.

In addition to having more teachers per pupil than the low weight schools, the high weight schools also have more staff support per teacher. As shown in Figure 5 and the top row of Table 5, the high weight schools have about one full-time support staff person for every three teachers which is about twice the ratio in the low weight schools. The low R^2 of 0.052 indicates, however, that the school weight categories explain only a small proportion of the variation in support staff ratio across schools. That emerges as well from the less consistent patterns by weight index across the subsamples of schools. Most striking among the subsample patterns are the very large ratios for the “special program and other” schools in the high weight schools. Schools in the two highest weight categories reported in the table for that subsample have the equivalent of more than one support staff person for every two teachers. Thus, the evidence suggests that schools in those categories make different decisions about teachers and support staff than do other types of schools.

Conclusion about resources

The evidence is very clear that high weight schools do indeed end up with far more resources than the low weight schools. With one exception, all the resource indicators work in the same direction: on average, compared to low weight schools, high weight schools are allocated more central government funding and they receive more funding from local municipalities. As a result, they are able to hire both more teachers and more support staff. The one exception is that some of the low weight schools are able to augment their resources through parental fees and other miscellaneous revenue. Because additional revenues of that type bring with them additional costs not directly related to the central mission of the school – such as special activities for pupils and maintenance for revenue-generating facilities such as gymnasiums – their net effect is unclear. A select few low weight schools, however, do undoubtedly have more resources than other schools.

Has Weighted Student Funding Been Successful?

Having confirmed the greater resources of the high weight schools, we now turn to the central part of this analysis – determining whether the additional resources are sufficient to meet the goal of leveling the playing field across schools. For this purpose, we rely primarily on measures of school quality from the Dutch Inspectorate of Education. The more effectively that the funding system compensates for the educational challenges faced by the high weight schools, the more equal should be the average quality of schools in different weighting index categories.

“School effects” in achievement models

Before describing that analysis, we briefly address what can be learned from achievement data. The Netherlands has no required national test, but most schools use the CITO test for its year-8 pupils.²⁹ Along with advice from the primary school, a student’s score on this test plays a central role in determining the secondary school options for which the pupil is eligible. Figure 6 documents for the big four cities that average test scores are lower in the high weight than in the low weight schools. Because not all schools use the CITO test (either because they use a different test or use no end-of-school test) and not all pupils take the test even when it is offered, the figure is based on average scores for the 85 percent of schools who offer the test, and it corrects statistically for the percentage of pupils taking it in each school. The monotonically declining pattern is fully consistent with our expectations given the differing family background of students in the various school categories and is similar to comparable patterns that emerge for other countries. We emphasize, however, that the pattern provides no information whatsoever about the relative quality of the schools’ programs; instead, it primarily reflects the nature of the schools’ intakes.

For achievement data to provide any information on school quality, one must estimate achievement models designed to separate out so-called “school effects” from the effects of family background. “School effects” are the effects on achievement that are attributable to the school rather than to the characteristics of the school’s pupils. A recent multilevel analysis of pupil achievement in the Netherlands uses a nationally funded longitudinal data set directly to do just that (Gijsbert and Hartgers, 2005). In a model in which they control for the major pupil characteristics that affect pupil achievement, the researchers conclude first that only a small portion of the achievement differences across pupils are attributable to “school effects” and an even smaller proportion to the ethnic mix of a school’s pupils. In addition, they document that the negative contribution of the “ethnic schools” to student achievement has been declining over time (reported in Herwijer, 2009, p. 36). The declining effect on achievement of “ethnic schools” is consistent with the hypothesis that the additional funding received by those schools has made it possible for them to improve the quality of education they provide relative to that of other schools. How much of the reduction is due to school funding policies, however, is impossible to say.³⁰

²⁹ These tests are administered by the Central Institute for Test Development, which was initially public but has been a private company since 1999.

³⁰ Two other points are worth noting, about this analysis. First, it is not clear the extent to which, if any, the study addresses the bias that arises caused by the fact that pupils are not randomly assigned to schools of

Nonetheless, this analysis of the “school effects” on pupil achievement suggests that the system of weighted student funding may well have helped equalize school quality. We now turn to a more direct test of the effects of additional funding on school quality as measured by the Inspectorate of Education.

Quality of schools

During the relevant period for this study, each school was inspected every four years (with return visits to weak schools as deemed necessary).³¹ Included in the public report for each school are more than 20 submeasures based on a scale of 1, 2, 3 and 4. The fact that the Inspectorate uses a fixed standard for these measures makes them suitable for the current purpose. Although the Inspectorate also evaluates the achievement levels of students, that part of the evaluation is not useful to us because it is conditioned on the background of each school’s students. For its own internal purposes (but not for the public reports), the research division of the Inspectorate has combined the submeasures into eight broader measures, and has collapsed the original four--point scale for each of the submeasures into a simpler two-point scale where a 2 indicates that the school is not sufficient on the quality measure and a 3 that it is sufficient.³²

To assure coverage of all the primary schools in the big four cities, we use school reports for the years 2003-2007.³³ From the data provided to us by the Inspectorate, we constructed for each school an overall measure of school quality as the simple average of the eight measures and defined three components of school quality as follows:³⁴

Student-related school quality.

1. The school tailors its education program and process to the differing learning styles and educational needs of its students.

different types. Second, the cohort data on which the analysis is based does not permit the researchers to track pupils who change schools or are retained in grade, the incidence of which is likely to differ both by school and type of student.

³¹ The Inspectorate is currently developing a risk based approach for school evaluations in which schools that show evidence of adequate self monitoring will be inspected less frequently.

³² They collapsed the scale because of their concern that some inspectors may be more willing to use the extreme scores of 1 and 4 than others. That concern notwithstanding, the Inspectorate appears to have confidence in the validity and reliability of the average scores that comprise the eight measures. This confidence is based on the quality of the training provided to the inspectors, the discussions within inspectorate offices that lead to common understandings of the various measures, and the results of formal reliability tests. We thank Inge de Wolf, research director at the Inspectorate for making this data set available to us and for helping us to work with the data.

³³ Actually, a few of the reports are from the year 2002/03, so that in fact the data are from that year to the year 2006/07.

³⁴ Given that each of the eight measures is based on two or more submeasures, the following definitions simply indicate the nature of each of the component measures and do not provide a complete account of the specific components, a task that is made difficult in any case because they are in Dutch and not always amenable to easy translation.

2. The school collects data on the developmental needs of lagging students in a systematic way, has a plan to meet them, and monitors the effectiveness of that plan.

School related school quality.

3. The school gives attention to quality control in a systematic way
4. The curriculum meets the core requirements, and progresses appropriately from grade to grade.
5. The school has robust procedures for assuring the well-being and safety of pupils and teachers, and promotes respect among pupils.
6. The school systematically monitors student progress and has a comprehensive system of tools and processes for doing so.

Teacher-related school quality.

7. Teachers make efficient use of instruction time
8. Teachers are task oriented and clear, with students actively engaged in their learning.

The results are reported in Table 6, with the basic patterns displayed in Figures 7-10. The table reports two models for each of the quality measures. The first is a regression model with a constant for the base category and indicator variables for each of the other school weighting index categories. Hence the reported coefficients can be interpreted as deviations from the base category. The second model adds control variables for each city (relative to Amsterdam), type of school (relative to public schools), size of board (relative to a board with 2-14 schools) and year (relative to 2006/07). The figures display the deviations as estimated in the first model for each measure. The dark stripes indicate that the deviation is statistically significant at the 5 percent level and the lighter stripes at the 10 percent level.

The figures tell the story. Overall quality (Figure 7) is lower in three of the four high weight categories and that quality shortfall is primarily driven by the negative deviations in the student-related component of school quality (Figure 8). Interestingly, the negative deviation for the highest weight category in both figures is smaller than for the prior three categories and is not statistically different from zero. Turning to the other components of school quality, we find no significant deviations for the school-related component (Figure 9) and only one in the 1.3-1.4 category for the teacher-related component. Thus, the challenge for many of the high weight schools appears to be the difficulty they face in addressing the educational challenges faced by so many of their students.

We extended the analysis by adding control variables to make sure that the findings do not simply reflect idiosyncracies in the inspection process or peculiarities of a small group of schools. Even with all the control variables – those for cities, types of schools or boards, and year of inspection – the basic patterns remain, although the estimated deviations are slightly smaller in some cases. With respect to the teacher component, the negative deviations are larger and become statistically significant in two of the high weight categories.

The coefficients of the control variables exhibit some interesting patterns. Relative to Amsterdam, overall school quality appears to be higher in both Rotterdam and The Hague even after controlling the school weight categories. The higher quality in Rotterdam for three of the four measures is consistent with the general impression that emerged from several of our interviews, namely that the elected official in charge of education in that city has been working particularly hard to improve school quality. The negative coefficient for the category of “other” schools for overall quality and for two of the three components indicates that such schools receive statistically significantly lower quality ratings than the base category of public schools. Finally, the fact that many of the indicator variables for the early years enter with negative signs suggests either that the inspectors have become more lenient over time, or that schools have improved.

Potential explanations for the quality shortfalls. A full exploration of the reasons for the quality shortfalls in the high weight categories is beyond the scope of this analysis. Nonetheless, we have two hypotheses that deserve further investigation and analysis. The first is that the high weight schools may find it difficult to attract high quality teachers and principals. Stated differently, although weighted student funding makes it possible for such schools to hire more teachers, more quantity may not translate into high quality. The second starts from the recognition that teaching concentrations of disadvantaged students is difficult and posits that teachers in the high weight schools may not have the particular skills and knowledge necessary to do it well.

Many U.S. studies document that the schools serving high proportions of challenging-to-educate students tend to have teachers of lower quality, on average, than do other schools (e.g, Clotfelter, Ladd, and Vigdor, 2007; and Boyd, Lankford and Wyckoff, 2008) . This pattern typically reflects the combination of a uniform salary structure (at least within districts) and the observation that many teachers, but certainly not all, apparently prefer to teach in schools with more advantaged students where the working conditions are more attractive. In the United States many new teachers start out in disadvantaged schools but soon move to more advantaged schools, which generates greater turnover, more vacancies, and a lower quality teaching staff in the disadvantaged schools than in the schools serving more advantaged students. The fact that the Netherlands has a nationally uniform salary schedule suggests that the incentives for Dutch teachers could be similar to those in the U.S. The pattern might differ in that country, however, because the presence of additional staff in the high weight schools could potentially improve working conditions sufficiently to make such schools no less attractive than other schools. But there is no evidence that it does so.

In fact, there is hardly any evidence at all related to the distribution of teacher and principal quality across primary schools, and our efforts to shed some light on the issue have been hampered by the absence of teacher quality measures. In contrast to the U.S., for example, it is not possible to distinguish Dutch primary school teachers by their teacher licensure test scores, their graduate training or by their value-added in the classroom. The only information of this type we have found emerges from a survey based on a relatively small number of teachers which shows that teachers in underprivileged schools have taken fewer extra courses than those at more privileged schools.

(Jongbluth, 2003, p. 84). In addition the statistically significant negative coefficients for some of the high weight school categories that emerge of our analysis of the teacher component of the school quality measure – at least in the full model with the control variables – is also consistent with the hypothesis of lower quality teachers in the high weight schools.

Some additional suggestive evidence emerges from the higher unfilled vacancy rates found in the primary schools serving high proportions of minority pupil than in other schools. National survey data show, for example, that for the school year 2007/08, the unfilled vacancy rate – defined as a fraction of all jobs in the school in all schools – was low in all schools, but it was more than four times as high in the schools serving more than 50 percent minority pupils than in schools with fewer than 5 percent of such students (Regioplan, 2009).³⁵ Because difficulty filling vacancies typically means that schools often have to settle for lower quality teachers, the patterns provide suggestive evidence that the schools with large minority populations have lower quality teachers than others. Further evidence of this type emerges from a recent study of segregation in Amsterdam schools which found that teacher vacancies in that city were far more numerous in the schools serving more than 70 percent disadvantaged migrants than in other schools (summarized in Karsten et al, 2006, p. 240).³⁶

Other evidence could be less consistent with this hypothesis but is hard to interpret. Based on data on teacher inflows and outflows as well as information on teacher experience for both full and part time teachers, we find no evidence that departure rates are higher in the high weight schools or that such schools have a disproportionate share of teachers with limited experience. In fact, the reverse is usually true. The implications of these patterns for teacher quality are not clear because we do not know how the quality of relatively new teachers compares to that of more experienced teachers in the Dutch context. Nor do we know much about the quality of parttime relative to full time teachers.

Why are the shortfalls smaller in the highest weight schools? One of the intriguing findings to emerge from our analysis is the smaller quality shortfall in the highest weight category relative to that in the other high weight categories. Our discussions with Dutch policy makers and researchers have generated a number of potential explanations, only one of which we have tested ourselves. Among these is the possibility that it may be easier for schools to focus on the needs of their students when most come from a disadvantaged background than when the student body is more mixed. This explanation is consistent with the following conclusion in a recent background report on immigrant education based on research by Gijsberts (2006): “By tailoring their

³⁵ The unfilled vacancy rate is defined as the unfilled jobs divided by the total jobs in a school averaged over the year and ranges from 0.2 in the schools with few cultural minority students to 0.9 in the schools with more than 50 percent such students. The information is based on a sample of 2000 primary schools which, according to the authors of the report, is not large enough to separate the effects of being in a big city from those of having a disproportionate share of minority students.

³⁶ One limitation of that study is that it reports total vacancies in a school not relative to the number of teachers, which are far higher in the schools serving disproportionate numbers of disadvantaged minority students.

education to the pupil population, ‘ethnic schools’, are becoming increasingly successful in enabling comparable pupils to achieve comparable results.” (quoted in Herweijer, 2009, 36) Further support for this hypothesis comes from Driessen et al. 2003 (reported in Karsten et al, 2006, p. 240). An alternative, and related, explanation is that because many of the schools in the highest weight category have served very large proportions of migrant students for long periods of time, they have had time to adjust to the demands of their challenging environment. This situation contrasts with that in many of the schools in other high weight categories, where the student bodies may be more in flux as the schools either become less disadvantaged or more disadvantaged over time.

Other potential explanations include the possibility that the municipalities give special attention to the schools with the highest proportions of disadvantaged students.. That story is generally consistent with the current situation in Amsterdam, for example, where certain schools have been singled out to receive substantial additional support to develop school management plans. A variant of that explanation is the “Rotterdam effect.” Given that Rotterdam has both a large number of very high weight schools and an active alderman pushing for high quality schools, we hypothesized that the differentially small quality shortfall in the highest weight schools might reflect the above average performance of those schools in Rotterdam. A statistical test based on an interaction effect for Rotterdam, however, rules out that hypothesis. A final hypothesis is that the Inspectorate may simply be more sympathetic to those schools than to other schools. Our discussions with the Inspectorate about their procedures provide no support for that hypothesis, though we cannot rule it out.

Conclusion. Our basic conclusion is that weighted student funding falls short of the minimum goal of leveling the playing field across schools. This outcome occurs despite the high weights for disadvantaged migrant pupils and the fact that the schools serving such pupils have substantially more resources than the low weight schools. Such shortfalls, however, might well have been far greater in the absence of the additional funding. For that reason, this finding does not negate the idea that such schools need more funding than other schools to provide a quality education or the possibility that weighted student funding had a major positive impact. Instead it implies that even quite generous funding policies, by themselves, are not sufficient to equalize school quality across schools.

Other goals: weighted student funding and the achievement gap.

We argued earlier that because weighted student funding is part of a larger policy package it would be both unfair and difficult to evaluate the success of WSF funding in terms of its success in reducing achievement gaps. Nonetheless it is instructive to look at the levels and patterns of those gaps over time. We do so for the main categories of immigrants and native Dutch students in Table 7 based on language and arithmetic tests for students in year 8 over the period 1994-2004. The table documents the far lower test scores for the migrant groups, particularly Turks and Moroccans, relative both to native Dutch pupils whose parents have low education and especially relative to native Dutch pupils with more educated parents. The striking finding is that relative to the latter group

the gaps for the immigrant groups, but not for the disadvantaged Dutch, narrowed quite substantially between 1994 and 2004. For example, in language, the gaps for Turkish and Moroccan residents fell by 28 and 34 percent respectively, while the gap widened slightly for native Dutch pupils whose parents have low education. Other studies covering much the same period generate similar patterns (Mulder et al, 2005).

The program of weighted student funding could potentially account, at least in part, for the differential trends in achievement. That explanation is plausible given the far larger weights for the immigrant pupils than for the disadvantaged Dutch pupils, and the fact that many of the latter are enrolled in schools that receive little or no extra funding (See Table 2 above). The problem is that we cannot isolate the effects of WSF from other programs designed to combat disadvantage. And, even more important, we cannot separate those effects from the achievement gains that would naturally accrue to the immigrant population as more of them become second generation rather than first generation migrants. Research shows that pupils from the second generation perform at higher levels than those from the first generation, even after accounting for the education level of the parents into account (Herweijer, 2009, p. 9).

Regardless of the extent to which these trends in achievement gaps were the result of the weighting student funding program, they likely had an impact on the 2006 policy changes in the policy that are discussed in the next section.

Outlook for Weighted Student Funding in the Netherlands

The Dutch program of weighted student funding was remarkably stable for more than 20 years --from its inception in 1985 through 2006. The only change during that period was the 1993 tightening of the criteria for the 1.25 weight for disadvantaged Dutch students. Prior to the change, the criterion of low education applied to only one of the parents; after the change it applied to both parents. The main reason for the change was apparently that Dutch policy makers deemed the proportion of native Dutch pupils who were labeled as disadvantaged under the original criteria to be too high relative to other OECD countries.³⁷ With the change, the proportion of disadvantaged students fell from 33 percent to 25 percent. According to Ministry officials, the purpose of the policy change was not to save money. Indeed, they claim that a deal was made to assure that any saving was funneled to other education programs designed to combat educational disadvantage. We do not have the data that would allow us to examine that claim.

The 2006 changes

A much more significant set of policy changes was made in 2006. Among the changes were the replacement of the original weights, including most notably the weight for migrant children, with new additional weights of 0.3 for pupils whose parents have low education and 1.2 for pupils whose parents have extremely low education; a reduction in the funding threshold from 9 percent to 6 percent; the introduction of lump-

³⁷ Interview with Joop Groos, Ministry of Education, Culture and Society. The Hague (2/20/2009).

sum funding: and the separation of public school boards from the municipalities to put them on a more equal footing with the private school boards.

Of most significance was the elimination of migrant status from the weighting system. Our investigations have uncovered several reasons for the change. The first was clearly a political imperative. The rise in anti-immigrant fervor after the events of 9/11 in the U.S. along with the rising popularity of the anti-immigrant politician Pim Fortuyn (who was subsequently killed by an animal rights activist) increased the willingness of conservative parties to criticize policies that favored immigrants over the native Dutch. In addition, the progressives understood the political advantages of taking the migrant issue off the table in return for a policy change that would continue to address the same issue in a more politically acceptable way. That goal was accomplished by the new higher weight for pupils whose parents had extremely low educational attainment, most of whom would be migrants.

But political considerations were not the only explanation. One pragmatic consideration was the observation that the number of third generation immigrant children in primary school was increasing. This change meant that using the country of origin of the parent would no longer suffice for this group, many of whom were still underachieving. Another was that there was a growing group of children of higher educated asylum seekers for whom the 0.9 weight was less justified (Bosker, Mulder and Glas, 2001). Further support for dropping the migrant criterion was the observation reported in the previous section that the achievement gap for migrant vs. Dutch students was closing. In fact, though, research commissioned by an advisory council to the Ministry showed that even after the researchers controlled statistically for the education level of the parents, a significant adverse effect of migrant status was still evident (Bosker, Mulder and Glass, 2001). Based on that study, the advisory body recommended to the Ministry that migrant status not be dropped as a criterion for additional funding but that advice was not accepted.

The other 2006 changes to weighted student funding reflect the influence of the newly-elected center-right coalition government led by the Christian Democratic Appeal (CDA). Because the CDA garners more of its political support from the rural areas than from the big cities, it had an incentive to shift funds away from the big cities, where migrants were overrepresented, to the more rural areas where there were far more low educated, working class native Dutch families (see Table 2 above). Along with the removal of the 0.9 weight for disadvantaged migrants, the increase from 0.25 to 0.30 of the additional weight for pupils with parents having low education and the reduction of the funding threshold to 6 percent redirected funds in the desired direction. Whether or not the weight changes were specifically intended to save money is not clear. Data provided to us by the Ministry of Education, Culture and Science indicate that the total cost of weighted student funding increased from €8 million in 2005/06 to about €8.5 in 2008/09, or by about 6 percent. In both years the additional funding for the weighted students accounted for only about 4 percent of the total, but would obviously account for a much greater share of the total for the big four cities. Our own calculations for those

cities indicate that the extra funding attributable to the weights accounted for 18 percent of the total lump sum funding in 2007/08.

Also consistent with the conservative policies of the CDA was the change to lump sum funding. As we have described earlier, prior to the change the central government provided the personnel resources to schools (through their boards) in the form of positions that were funded for the actual teachers employed based on their salaries according to a national salary scale. Under the new lump sum system, the school boards are supposed to receive funds in the form of a lump sum that is calculated based not on the salaries of the actual teachers employed but rather on national average salaries. This shift is designed in part to give schools (and their boards) an incentive to alter the mix of their teachers in ways they deem most productive, but within the context of an overall budget constraint. It is far too early to determine the effects of this policy change in part because the national government is currently providing additional funds to boards that have many experienced and hence, higher paid teachers in order to ease the pain of moving to the new system.

The separation of public school boards from their municipal governments is also in line with CDA ideology. Given the CDA's strong commitment to freedom of education, the goal of this change was to put all schools – whether they are public or private – on exactly the same footing in their relationships with the municipality. Under the old system, the municipal governments were required to provide equal support for the publicly and privately operated schools. However, the structure led to concerns among some that the public schools were being favored.³⁸ The new public school boards are not elected and, at least in some cases, are being run by increasingly professional staffs.

A main effect of the policy change will be to reduce the funding to schools serving large proportions of disadvantaged migrant students. Because the new policy was phased in, the full effects are not yet apparent. As of 2007/08, the new weights applied only to the pupils in the lowest four grades. Nonetheless the patterns are clear. A comparison of school weighting indices for the years 2005/06 and 2007/08 shows the following changes. For schools with a weighting index of 1.8 to 1.9 in the early year, 70 percent had weighting indices below 1.8 in the latter year, with about 25 percent of the total below 1.7. For schools with an initial weighting index of 1.7 to 1.8, about two thirds had indices below 1.7 in the later year, with more than 20 percent below 1.6. Thus, even accounting for the 3 percentage reduction in the threshold, many schools have already experienced substantial cuts in the amounts of weighted student funding allocated to them. Our spring 2009 interviews with some of the affected school principals indicated that in some cases the short term adverse impact was muted by the addition of funds from other sources. All were acutely aware, however, that their schools would continue to lose funds, and hence would have to cut back on teachers and other personnel, as the phase in of the new program continued.

³⁸ Interview with Jaap Lemeris, Department of Social Development (DMO), City of Amsterdam (3/23/2009)

From our interviews with policy makers and education researchers, we detected no reason to believe that these 2006 changes signaled a declining commitment to weighted student funding. Indeed, continued commitment to the idea of using national funding policy to level the playing field appears to be strong. The main change is the shift to exclusive reliance on parental education as the criterion for the weights. That change is not inconsequential and is likely to lead to additional changes in the criteria in the relatively near future.

Parental education versus family income as the basis for the weights

An intriguing element of the Dutch system is its use of parental education as the key measure of pupil disadvantage (other than immigrant status). This practice contrasts with that in the U.S. where educational disadvantage is more typically measured by a pupil's eligibility for the federal subsidized lunch program. The use of parental education rather than an income measure reflects both the traditional Dutch aversion to talking about income and the extensive international research literature that documents the greater predictive power for educational achievement and attainment of parental education than of income (Murnane, Maynard and Ohls. 1981, Chevalier et al. 2005, and Haveman, Wolfe and Spaulding, 1991)

As we briefly noted earlier, both the initial introduction of the weights and the subsequent decision to change them in 2006 was informed in part by Dutch studies of the relationship between parental education and pupil achievement. These studies use data from government financed longitudinal cohort studies to examine the relationship between parental education, as self-reported by parents, and student achievement as measured by tests given to the pupils in the survey.³⁹ One assumption underlying such studies, indeed in all studies of this type, is that the parents' self reports of their education are generally accurate. That assumption is probably reasonable given the absence of stakes attached to the answers.

Concern about the accuracy of self reported educational attainment emerges much more starkly in connection with the implementation of weighted student funding, and especially now that parental education is the sole determinant of the weights. When parents enroll their children in a school, they are required to provide information about their own educational background, which the school then uses to determine which students are eligible for additional funding. Clearly it is in the financial interest of schools to encourage parents to understate their educational attainment. Parents, particularly, male migrants, however, are often embarrassed about their low levels of education and have a tendency to overstate their education. Our interviews with school principals in high weight schools in Amsterdam indicated they often do not let a migrant parent specify a high level of education without proof in the form of a diploma, which often

³⁹ The relevant cohort studies during this period are LEO (*Landelijke Evaluatie Onderwijsachterstandenbeleid*) and PRIMA (*Cohortonderzoek Primair Onderwijs*). For these studies, tests for language, arithmetic, and IQ were administered to children in grades 2,4, 6 and 8 in a representative sample of 600 Dutch primary schools. About half of the grade 8 students in both studies were followed into secondary school.

cannot be produced even if the migrant has one. In other interviews we heard stories of inconsistent reports of the same parents from one year to the next and potential cases of outright misrepresentation.

Thus getting accurate information of parental education is a problem with no obvious solution. Under the prior system, it was less of an issue because the education criterion for being a disadvantaged migrant was sufficiently loose that most migrants met it. But with the removal of the migrant criterion and the tightening of the education criterion for the largest weight, the accuracy of the information takes on new urgency. One Ministry official told us that since there is no good solution to the problem, he would favor shifting the criterion to income based on income tax reforms. He predicted that would happen within a few years.

Conclusions and Implications for the United States

The strong commitment of the Netherlands to parental choice of school and freedom of education means that schools have significant operational autonomy and no captive student bodies. Concomitantly, national and municipal governments have essentially no operational responsibility for individual schools. Given this context, it clearly makes sense for the Dutch to have a school funding system in which money follows pupils to the schools they choose. Differentially large weights for disadvantaged students, however, are not essential to such a funding system -- and indeed were not part of the Dutch system prior to 1985. The willingness of the Dutch to use the student weights to direct significantly more funding to the primary schools that need it the most is fully consistent with their values. These values include a strong commitment to equal educational opportunity and to the concept that no identifiable groups of children should be allowed to lag behind.

Accomplishments of the Dutch system

The Dutch experience with weighted student funding demonstrates that it is possible for a developed country of 16.5 million people (which is more than in most U.S. states but still less than the four largest U.S. states) to provide substantially more resources for primary schools serving large proportions of disadvantaged students than for more advantaged schools – and to maintain such a funding system over a long period of time.

In particular, we have shown that per pupil funding allocated by the central government to the high weight schools in the four largest cities is more than 70 percent higher than in the low weight schools and that this pattern differs neither across cities nor across the major types of schools. Although the existence of multiple school boards (which should not be confused with U.S. school boards) in each city complicates the picture somewhat, additional evidence at the school level confirms the greater resources in the high weight schools. In particular, we documented that such schools have about 58 percent more teachers per pupil and almost double the support staff per teacher than the

low weight schools. Moreover, we have described how the system has, until quite recently, remained essentially unchanged over a long period of time.

The resulting resource pattern, we believe, is an impressive accomplishment in the direction of educational equity. Nonetheless, the high weights of the Dutch funding system of weighted student funding notwithstanding, the funding system alone is not sufficient to assure equal educational opportunity.

Not the “100 percent solution” even in the Dutch context

We have documented empirically in this study that, despite the use of funding weights for disadvantaged migrants that are high by U.S. standards, the Dutch funding system does not meet even its minimal goal of assuring equal quality education across schools. This conclusion is based on our analysis of quantitative measures of school quality available from the Dutch Inspectorate of Education. Moreover this outcome occurs despite the presence of an Inspectorate system that supervises schools and a system of parental choice in which parents have many alternatives from which to choose if they are not happy with the quality of their child’s current school.

Unfortunately, we have not been able to undertake a thorough investigation of the reasons for the quality shortfall observed in the three of the four categories of high weight schools. The limited data we have presented on teacher vacancies, as well as anecdotal information from our interviews about high turnover of principals in such schools, is generally consistent, albeit not definitively so, with our speculation that the quality of school personnel may be lower in the high weight schools than in the low weight schools. Also worthy of additional attention is the more general issue of whether school personnel – even those of high quality – have the knowledge and skills needed to address the educational challenges that arise in schools with large and possibly changing concentrations of disadvantaged pupils.

The observation that Dutch policy makers do not view weighted student funding as the only policy lever for addressing educational disadvantage provides additional support for our conclusion that WSF is not a panacea. For example, the central government provides additional funds to municipalities so that they can promote language programs in schools designed to raise the language skills not only of immigrants but also of the native Dutch who come to school with limited language skills. In addition, the Dutch have made significant investments in pre-school education, in extended schools (*brede scholen*) designed to enrich opportunities for disadvantaged students, as well as programs at the municipal level that work closely with other community organizations to address the needs of children in a holistic way. Moreover, all such programs are in addition to a strong health care system in which the health of children is monitored in a systematic way as they progress through primary school. The programs differ in their quality and effectiveness, but the main point is that Dutch policy makers understand that schools alone cannot address all the development needs of children, particularly those from disadvantaged backgrounds.

Implications for the United States

The United States education system features far less parental choice and school autonomy than is the case in the Netherlands. Only in the last 20 years has there been any significant movement in the direction of breaking the previously close link between where families live and the school their child attends. Parental choice in the U.S. now takes the form of intra-district or inter-district choice programs among public schools, publicly funded charter schools, and voucher or tuition tax credit programs that provide publicly funded access to private schools. The existence, scale and nature of such programs, however, differs greatly across cities and states, with parents in many jurisdictions still having little or no choice of school. The more the country moves in the direction of parental choice of school, the more compelling would be the case for money to follow students to the schools they choose. Analogously, most schools are still operated by local school districts and are given only limited budgetary autonomy. The more the country moves in the direction of loosening up the supply side in the form of charter schools or publicly funded private schools, the more compelling would be the argument for funding the entire education system through the provision of lump sum grants to schools over which they would have substantial discretionary control, as would be the case in a system of weighted student funding.⁴⁰

Whether the full parental choice of school and school autonomy evident in the Dutch system make senses for the U.S., however, is a complex question that raises many issues far beyond the scope of this paper. Our analysis of the Dutch system does shed light on two possible downsides of such an approach. The first is the resulting high levels of school segregation by educational disadvantage in Dutch cities. Though we have not highlighted that issue in the research reported in this paper, in a related paper we find segregation levels between disadvantaged migrant and other pupils in the four big cities that are as high or higher than in many U.S. cities, and levels of segregation that are rising over time in the smaller Dutch cities (Ladd, Fiske, and Ruijs, 2009). Though the system of weighted student funding offsets to some extent the negative educational effects of such segregation, it does little to offset any undesirable social effects associated with the segregation of immigrants from the native Dutch.

A second potential downside of the Dutch system of parental choice and school autonomy is the diminution of authority of the local officials, namely the municipal authorities in the Dutch context who would be the counterparts of district officials in the U.S. context. Some observers might well view this diminution as an important benefit of a more decentralized system. Because individual schools are part of an interconnected system of students and teachers, however, full parental choice and school autonomy makes it difficult for local officials to assure that the system meets the public interest, and not just the private interests of individual parents. Public and private interests diverge in

⁴⁰ We note that the 2006 Fordham Institute document promotes weighted student funding as a way to encourage more choice and school autonomy. We believe that is putting the cart before the horse. Instead of using the funding system to change the system of education, we think it makes more sense to determine first whether the benefits of moving in the direction of more choice and school autonomy outweigh the costs, and only then to change the funding system to make it compatible with the new education system.

part because pupils and teachers both make decisions about schools based not only the educational programs and philosophies of those schools but also on the composition of their student bodies. As a result, the decisions of some may adversely affect outcomes for others.⁴¹ More generally, school autonomy makes it difficult to develop coordinated strategies between city or district officials and the schools.⁴²

Even in the context of the current mixed system in the U.S. – that is, a system with some, but not full, parental choice and school autonomy – weighted student funding could well represent an improvement over our current system for funding schools. Emerging from the Dutch experience with weighted student funding, however, are two requirements for the success of such a system, requirements that are likely to be difficult to achieve in the U.S.

One requirement is centralized funding. The central government in the Netherlands pays for the whole program of weighted student funding and, with the addition of some small categorical programs, provides about 90 percent of all the public funding for primary schools. Central funding is clearly necessary if the goal is to have equitable funding across the country. With local financing, the funding levels and patterns would undoubtedly differ across cities because of differences in the revenue-raising capacity and in policy priorities in the cities. Moreover, with a local system of funding, it would be difficult to have the significantly differentiated weights that are essential to the equity of the Dutch system. Larger funding weights (and hence a more redistributive policy) in one city relative to others, for example, would generate incentives for the middle class to leave that city in favor of cities where more of their tax dollars would go to schools for their children. Stated differently, political pressures, especially those exerted by the middle class, within a city are likely to prevent individual cities from having highly redistributive funding systems.

Translated into the U.S. context, this requirement implies that at a minimum weighted student funding would have to be implemented at the state, not the district level. Only in that way would it be possible to eliminate the large interdistrict inequities in resources that now exist in many states and to assure that the districts with the highest proportions of disadvantaged students receive the additional funds they need to compensate them for the additional educational challenges they face. To date, however, with the exception of Hawaii which is unusual in being a single-district state, the only

⁴¹ This idea is developed further in Fiske and Ladd, 2000, in the context of parental choice and school autonomy in New Zealand.

⁴² This issue was of significant concern in Rotterdam. (Interview with Olga Treep, research coordinator of Youth, Education and Society (JOS), City of Rotterdam, 5/08/2009). Concerns of this type appear to have motivated Michelle Rhee, the superintendent of schools in Washington D.C., to end the decade old policy of weighted student funding in that city. With WSF, she was not able to carry out her promise to have art, music and physical education teachers in all schools (Maxwell, 2008). Similarly, the Seattle Public School abandoned WSF because school autonomy made it “difficult to develop carefully coordinated strategies between the District and schools” (Quoted in Baker, 2009, p. 22).

experiments with weighed student funding in the U.S. have been at the city level and hence do not go very far in the direction of funding equity.⁴³

The second requirement that emerges from the Dutch experience is widespread agreement on some key social values related to equal opportunity. As a trading nation, the Netherlands long ago learned the importance of tolerance, allowing people to come and go and of showing them respect, if not always affection. The Dutch welfare state is built on the notion that it is in everyone's interest to have an equitable society and that no one should be forced to be an outsider because of avoidable circumstances such as poverty, poor health, or insufficient education. Such a consensus is particularly important with a program such as weighted student funding. In contrast to the alternative of programmatic funding in which policy makers may be able to agree on key goals, but in which it may be difficult for the public to determine how money is distributed to individual schools, weighted student funding is far more transparent. The student weights are public information, and, in the Netherlands, the funding levels and the calculations that underlie them are available for each school and are available on the internet and readily observable through different class sizes in different types of schools.

Without a strong underlying buy in to progressive funding of that type, it is not clear that such a system is possible, or that it can survive political pressures over time to weaken the redistributive elements in favor of a funding system that responds to the more politically powerful middle class. Illustrative of the problem in the U.S. context is that the additional weight for gifted children used in the Houston WSF program is far higher than that for disadvantaged students.

Hence, we end on a cautionary note. We alluded in the introduction to the fact that the 2006 U.S. proposal for weighted student funding appeals to conservatives because it pushes the U.S. system in the direction of more parental choice and budgetary autonomy for schools, and to progressives who favor additional funding for disadvantaged students. The two parts of the WSF package, however -- namely, student-based funding that follows students to the schools they choose and additional weights for disadvantaged students -- need not be joined at the hip. Indeed the Dutch had student funding, parental choice and school autonomy for more than half a century before they introduced the additional weights. In practice the two parts could be decoupled. From the perspective of progressives in the U.S., the danger is that the additional weights that promote funding equity could easily be the part that falls by the wayside.

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⁴³ A proposal for weighted student funding at the state level has, however, been made for the state of Ohio. For a thoughtful review of that proposal that highlights the importance of a state-level policy, see Baker (2008).

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Table 1. Primary schools and students by student weight, school type and board type. 2005/06

	Big 4 Cities	Rest of country	Whole country
I. Schools and students			
Total schools	596	6,360	6,956
Total students	169,864	1,379,224	1,549,088
II. Students by weight (percent)			
0.0	50.4	80.8	77.45
0.25	6.6	10.7	10.2
0.9	42.9	8.3	12.1
Other (0.4, 0.7)	0.1	0.3	0.3
III. Students by school type (percent)			
Public	39.1	29.7	30.8
Roman Catholic	22.4	35.6	34.2
Protestant	25.0	24.3	24.4
Special program	6.6	4.7	4.9
Other	6.9	5.7	5.8
IV. Schools by board type (percent)			
1 school	7.0	6.9	6.9
2-14 schools	26.5	48.3	46.4
>15 schools	66.4	44.7	46.7

Notes. Distribution of students by type of school is based on the 6842 schools for which we can identify the type of school. 581 of these schools are in the G-4. (01-04-2009 memo). Calculations by authors based on data from the Central Agency for the Financing of Schools (CFI).

Table 2. Distribution of students by school weighting index and student weight, big cities and whole country, 2005/06 (percent)										
	1.0-1.1	1.1-1.2	1.2-1.3	1.3-1.4	1.4-1.5	1.5-1.6	1.6-1.7	1.7-1.8	1.8-1.9	Total
Big 4 cities										
I. All students	24.8	12.4	8.4	6.4	5.2	7.7	8.6	13.6	13.0	100
II. By school weighting index (percent in column)										
0.0	94.8	76.7	64.6	50.9	40.4	32.8	21.6	12.0	5.0	50.4
0.25	2.5	8.8	11.0	14.3	13.6	9.2	7.7	5.3	2.3	6.6
0.9	2.7	14.3	24.3	34.6	45.4	57.7	70.7	82.6	92.7	42.9
III. By student weight category (percent in row)										
0.0	46.6	18.9	10.7	6.5	4.1	5.0	3.7	3.2	1.3	100
0.25	9.4	16.5	13.9	13.8	10.5	10.6	10.0	10.7	4.5	100
0.9	1.5	4.2	4.7	5.2	5.5	10.3	14.2	26.2	28.2	100
Whole country										
IV. All students	64.1	16.7	6.6	3.2	2.0	1.7	1.7	2.1	1.8	100
V. By school weight index (percent in column)										
0.0	90.2	72.9	60.6	49.0	36.4	29.4	19.0	11.6	4.9	77.5
0.25	7.8	15.7	17.7	17.5	18.9	13.8	11.5	5.7	2.2	10.2
0.9	1.9	10.9	22.1	32.9	43.7	56.4	68.9	82.6	92.9	12.1
VI By student weight category (percent in row)										
0.0	74.6	15.7	5.2	2.0	0.9	0.6	0.4	0.3	0.1	100
0.25	48.6	25.6	10.9	5.5	3.7	2.2	2.0	1.2	0.4	100
0.9	10.3	15.0	12.2	8.8	7.3	7.8	9.9	14.6	14.1	100
Notes. The columns are the school weighting indices and the rows refer to students by their funding weight. The percentages for all students include the small percentages of students with weights of 0.40 and 0.70. Categories may not sum to the total because of rounding. Calculations by authors based on data from the Central Agency for the Financing of Schools (CFI).										

Table 3. Distribution of primary schools and students by city, 2005/06

	Amsterdam	Rotterdam	The Hague	Utrecht
I. Schools and students				
Total schools	199	178	137	82
Total students	56,235	50,936	40,924	21,719
II. Students by weight (percent)				
0.0	50.0	41.27	55.60	63.0
0.25	4.6	9.2	6.3	6.4
0.9	45.3	49.5	37.8	30.4
III. Students by type of school (percent)				
Public	49.2	36.3	31.6	34.0
Roman Catholic	16.9	21.4	25.8	32.1
Protestant	15.3	33.9	26.4	26.8
Special Program	8.2	3.8	9.5	3.4
Other	10.5	4.6	6.7	3.7
IV. Schools by board size (percent)				
1- school	8.0	6.2	6.6	7.3
2-14 schools	55.3	9.0	16.1	12.2
> 15 schools	36.7	84.8	77.4	80.5
V. Students by school weighting index (in percent)				
1.0-1.1	17.8	15.1	36.8	42.4
1.1-1.2	15.7	12.7	8.5	10.8
1.2-1.3	10.4	6.7	7.1	9.7
1.3-1.4	5.0	10.1	4.6	4.7
1.4-1.5	5.1	5.9	3.9	5.8
1.5-1.6	10.3	5.7	8.0	5.1
1.6-1.7	10.6	10.0	6.0	5.3
1.7-1.8	15.7	18.0	8.0	8.0
1.8-1.9	9.3	15.9	17.2	8.1
Total	100.0	100.0	100.0	100.0

Notes. Columns may not sum to 100 because of rounding. Calculations by authors based on data from the Central Agency for the Financing of Schools (CFI).

Table 4. Teachers per pupil, by selective school weighting categories, 2006/07 (Relative to the base category for the four big cities)

	Model information		Selective school weighting categories				
	No. of Schools	R ²	1.0-1.1 (base)	1.2-1.3	1.4-1.5	1.6-1.7	1.8-1.9
Big 4 total	579	0.64	1.000	1.115*	1.288*	1.442*	1.577*
City							
Amsterdam	191	0.39	1.058	1.135*	1.327*	1.462*	1.558*
Rotterdam	175	0.49	0.981	1.096*	1.250*	1.365*	1.577*
The Hague	131	0.33	1.000	1.154*	1.365*	1.462*	1.635*
Utrecht	82	0.75	0.924	1.015	1.182*	1.697*	1.561*
School type							
Public	219	0.73	1.000	1.135*	1.288*	1.481*	1.635*
Roman Catholic	124	0.71	0.962	1.135*	1.308*	1.423*	1.692*
Protestant	143	0.77	0.962	1.135*	1.308*	1.404*	1.596*
Special program and other	84	0.36	1.058	1.000	1.135	1.288*	1.135
Size of board							
Small (1-school)	62	0.46	1.038	0.981	1.135	1.288*	1.173
Average (2-14)	211	0.66	1.019	1.115*	1.288*	1.442*	1.558*
Large (>14)	306	0.68	0.981	1.154*	1.308*	1.481*	1.635*
<p>Note. Each entry for the selective school weighting categories is the average teacher pupil ratio expressed relative to the average teacher pupil ratio in the base WI for the G4 cities. The weighting index groups are based on data for 2005/2006. The * denotes that the average in the specified school weight category differs from the average in the lowest weight category for the specified group of schools at the 5 percent level. The R² refers to the explanatory power of a regression that includes all the weighting index categories, not just the ones reported in the table.</p>							

Table 5. Total support staff as a share of teachers, by selective school weighting categories, 2006/07

	Model information		Selective school weighting categories				
	No. of Schools	R ²	1.0-1.1 (base)	1.2-1.3	1.4-1.5	1.6-1.7	1.8-1.9
Big 4 total	579	0.052	0.163	0.253*	0.293*	0.305*	0.324*
City							
Amsterdam	191	0.077	0.254	0.200	0.284	0.355	0.376*
Rotterdam	175	0.111	0.180	0.250	0.432*	0.312*	0.341*
The Hague	131	0.081	0.119	0.479*	0.232	0.206	0.305*
Utrecht	82	0.134	0.104	0.083	0.119	0.229*	0.189*
School type							
Public	219	0.120	0.149	0.189	0.246*	0.229*	0.254*
Roman Catholic	124	0.076	0.106	0.443*	0.257	0.358#	0.294
Protestant	143	0.158	0.125	0.167	0.433	0.283*	0.348*
Special program and other	84	0.268	0.225	0.188	0.235	0.554*	0.592*
Size of board							
Small (1-school)	62	0.280	0.211	0.202	0.235	0.537#	0.480
Average (2-14)	211	0.141	0.190	0.187	0.369	0.373	0.377
Large (>14)	306	0.061	0.102	0.310*	0.252*	0.224#	0.295*

Note. Each entry for the selective school weighting categories is the average total support staff in the school as a fraction of the number of teachers in the school (both in terms of FTEs) for the specified group of schools. The weighting index categories are based on data for 2005/2006. The * denotes that the average in the specified school weight category differs from the average in the lowest-weight category for the specified group of schools at the 5 percent level. The R² refers to the explanatory power of a regression that includes all the weighting index categories, not just the ones reported in the table.

Table 6. School quality patterns by weighting index category, with and without control variables.

	Overall school quality		Student-related quality		School-related school quality		Teacher- related school quality	
	I	II	I	II	I	II	I	II
WI categories								
1.-1.1 (base)	2.832 (0.014)	2.797 (0.22)	2.738 (0.026)	2.654 (0.043)	2.823 (0.016)	2.772 (0.025)	2.961 (0.013)	2.993 (0.023)
1.1-1.2	-0.014 (0.023)	-0.022 (0.024)	-0.033 (0.045)	-0.027 (0.044)	-0.014 (0.028)	-0.025 (0.027)	0.012 (0.023)	-0.006 (0.023)
1.2-1.3	-0.016 (0.026)	-0.005 (0.025)	-0.045 (0.048)	-0.014 (0.048)	-0.008 (0.029)	-0.002 (0.029)	-0.021 (0.025)	-0.080 (0.029)
1.3-1.4	-0.028 (0.30)	-0.039 (0.029)	-0.096# (0.057)	-0.090# (0.055)	0.001 (0.034)	-0.015 (0.033)	-0.060* (0.029)	-0.080* (0.029)
1.4-1.5	0.002 (0.032)	-0.004 (0.030)	-0.024 (0.057)	-0.009 (0.056)	0.007 (0.035)	-0.004 (0.034)	0.023 (0.029)	0.007 (0.030)
1.5-1.6	-0.046# (0.027)	-0.070* (0.025)	-0.131* (0.052)	-0.095# (0.050)	-0.028 (0.030)	-0.014 (0.030)	0.005 (0.026)	-0.003 (0.027)
1.6-1.7	-0.065* (0.025)	-0.045* (0.022)	-0.153* (0.046)	-0.132* (0.047)	-0.032 (0.028)	-0.039 (0.028)	-0.036 (0.024)	-0.052* (0.025)
1.7-1.8	-0.053* (0.022)	-0.026 (0.023)	-0.140* (0.040)	-0.101* (0.043)	-0.021 (0.025)	-0.016 (0.026)	-0.031 (0.021)	-0.048* (0.023)
1.8-1.9	-0.017 (0.023)	-0.026 (0.023)	-0.079# (0.043)	-0.072# (0.044)	-0.005 (0.025)	-0.018 (0.026)	0.000 (0.022)	-0.007 (0.024)
Other variables								
Rotterdam		0.120* (0.018)		0.182* (0.034)		0.125* (0.020)		-0.029 (0.018)
The Hague		0.078* (0.020)		0.183* (0.038)		0.070* (0.023)		-0.040* (0.021)
Utrecht		0.029 (0.024)		0.070 (0.043)		0.042 (0.027)		-0.023 (0.023)
Roman Catholic		0.019 (0.017)		0.067 (0.032)		0.014 (0.687)		-0.001 (0.017)
Protestant		0.012 (0.018)		0.015 (0.031)		0.020 0.018		0.012 (0.017)
Special program		-0.044 (0.031)		-0.059 (0.059)		-0.052 (0.035)		-0.010 (0.032)
Other		-0.087* (0.028)		-0.132* (0.054)		-0.103* (0.032)		-0.027 (0.029)
1-school board		0.036 (0.025)		0.069 (0.047)		0.041 (0.028)		0.007 (0.025)
Large board		0.001 (0.017)		-0.003 (0.032)		-0.009 (0.019)		0.011 (0.017)
Year 2003/04		-0.085 (0.031)		-0.160* (0.062)		-0.044 (0.036)		-0.088* (0.034)

Year 2004/05		- 0.058 (0.019)		-0.128* (0.039)		-0.018 (0.022)		-0.065* (0.021)
Year 2005/06		-0.023 (0.019)		-0.024 (0.035)		-0.006 (0.021)		-0.015 (0.019)
Year 2005/06		0.009 (0.020)		-0.014 (0.040)		0.036 (0.023)		-0.008 (0.020)
R ²	0.026	0.229	0.040	0.191	0.006	0.168	0.023	0.097
No. of observations	461	460	518	517	462	461	516	516

Notes. The entries are the coefficients from the regression equations described in the text. Model I includes a constant for the base category and the other eight weighting index categories and model II also includes the specified control variables, all of which are 0-1 variables. The city coefficients are relative to Amsterdam; the school type coefficients are relative to public schools; the board size coefficients are relative to average size boards (those with 2-14 schools); and the year coefficients are relative to 2006/07. The sample sizes represent the set of complete observations for each of the dependent variables.

Table 7. Scores on language and arithmetic test in primary school year group 8, by ethnic origin, 1994-2004						
	Turkey	Morocco	Suriname	Antilles	Native Dutch low ^a	Native Dutch high ^b
Language						
1994	36.4	38.8	42.1	40.9	48.1	53.4
1996	37.6	39.2	43.6	40.3	48.0	52.8
1998	37.2	40.5	44.2	40.1	47.6	52.8
2000	38.8	40.8	44.9	40.5	47.3	52.9
2002	39.3	42.0	45.7	40.7	47.5	52.6
2004	40.3	42.8	44.4	41.9	47.1	52.5
Change in gap 1994-2004 (%) ^c	-28	-34	-28	-15	+2	--
Arithmetic						
1994	42.8	42.5	42.6	41.5	47.7	52.8
1996	44.7	43.2	44.1	39.2	47.6	52.4
1998	45.1	44.1	44.6	42.3	47.1	52.2
2000	46.0	44.6	45.8	41.6	46.8	52.2
2002	45.7	44.7	44.0	42.2	46.6	51.9
2004	46.1	45.7	45.4	41.5	46.3	51.8
Change in gap 1994-2004 (%) ^a	-44	-41	-37	-9	+6	--
Notes. a. Highest educated parent has completed a low vocational education. b Highest educated parent has completed an education to the level of senior general secondary education or higher. C. Gap is relative to native Dutch high.						
Source. Lex Herweijer. OECD Thematic Review on Migrant Education Country: Background Report on the Netherlands The Netherlands Institute for Social Research. 2009, Table 30.						

Figure 1. Central government funding allocations 2007/08, by school weighting index

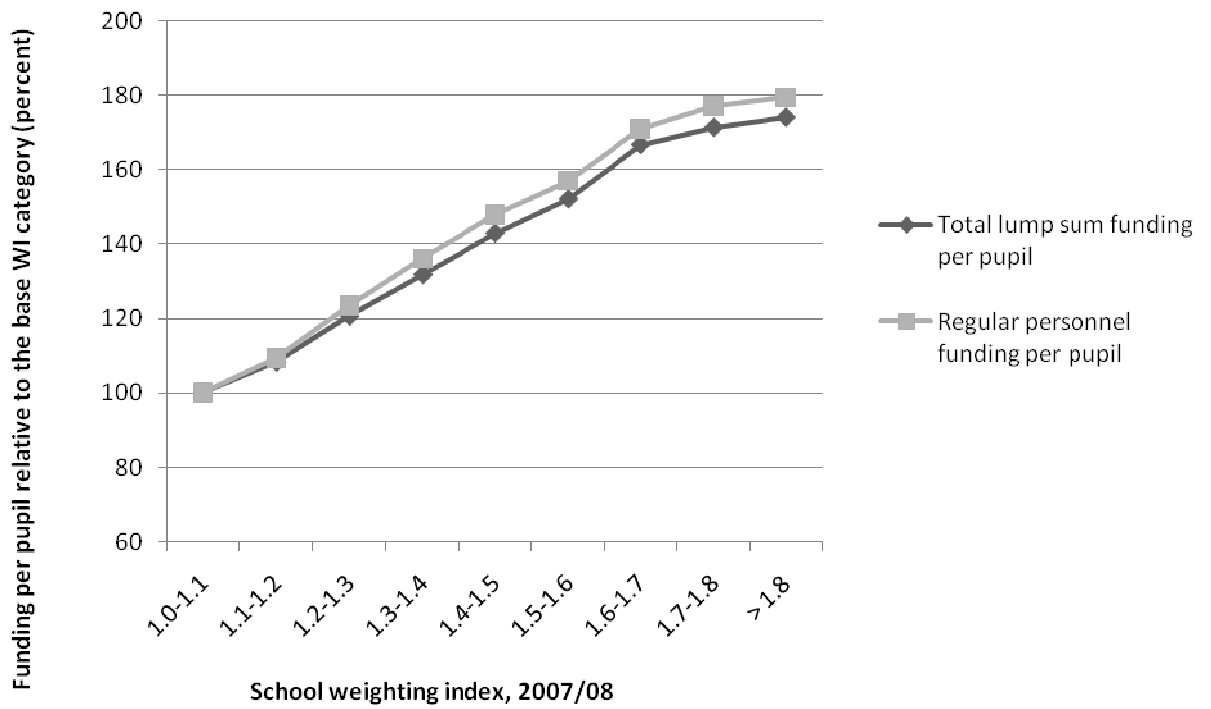


Figure 2. Local revenue and miscellaneous revenue as shares of central revenue, 2006, by school board weighting index

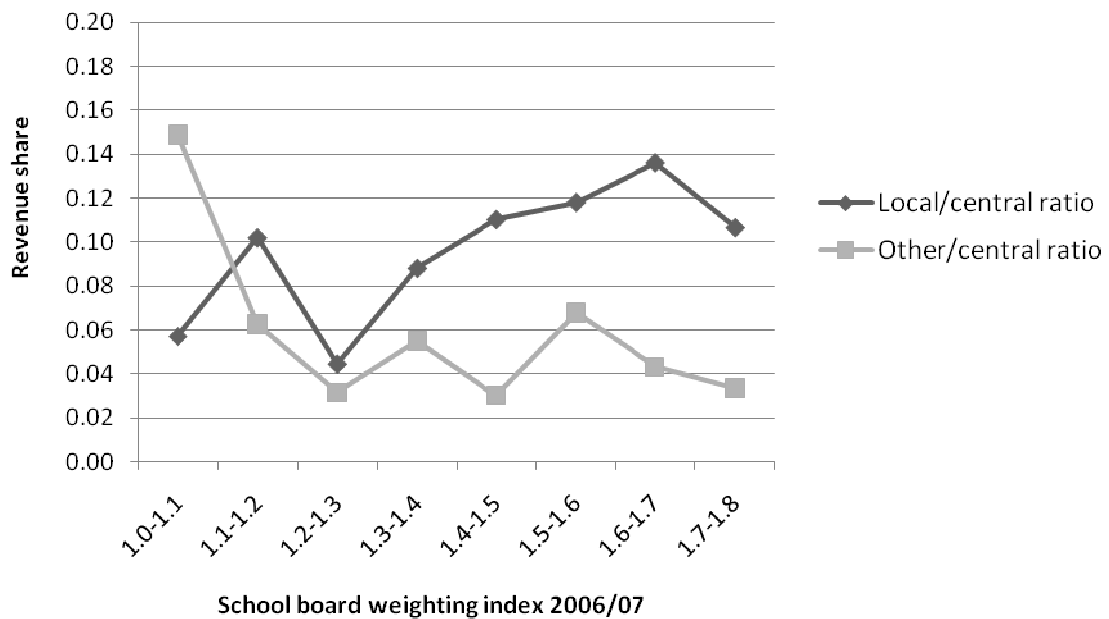


Figure 3. Local revenue and miscellaneous revenue as shares of central revenue, 2007, by school board weighting index

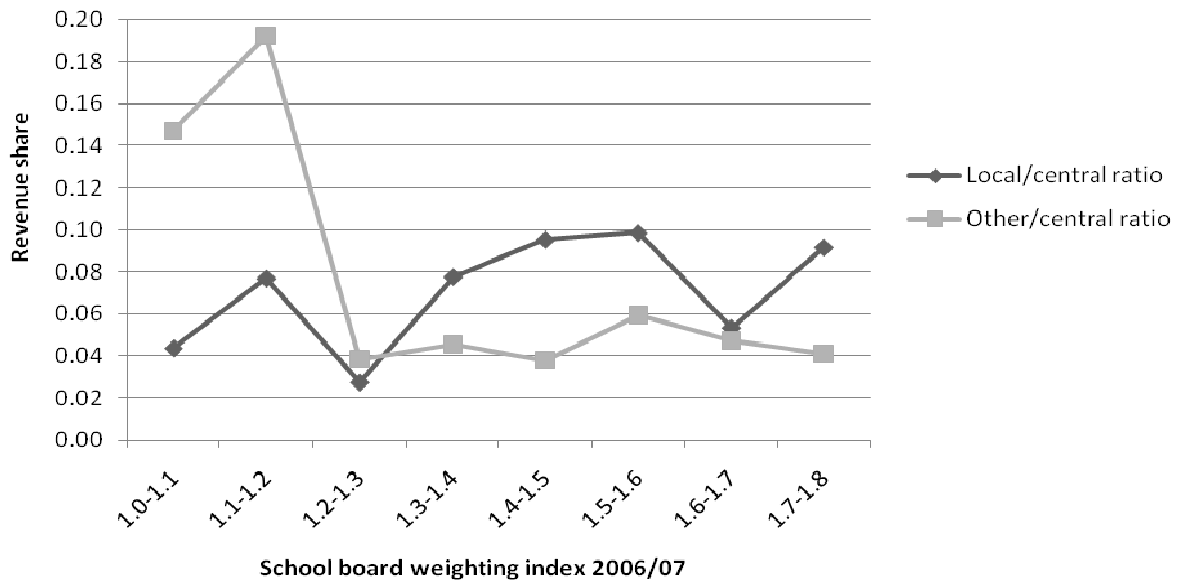


Figure 4. Teachers per pupil, 2006/07, by school weighting index

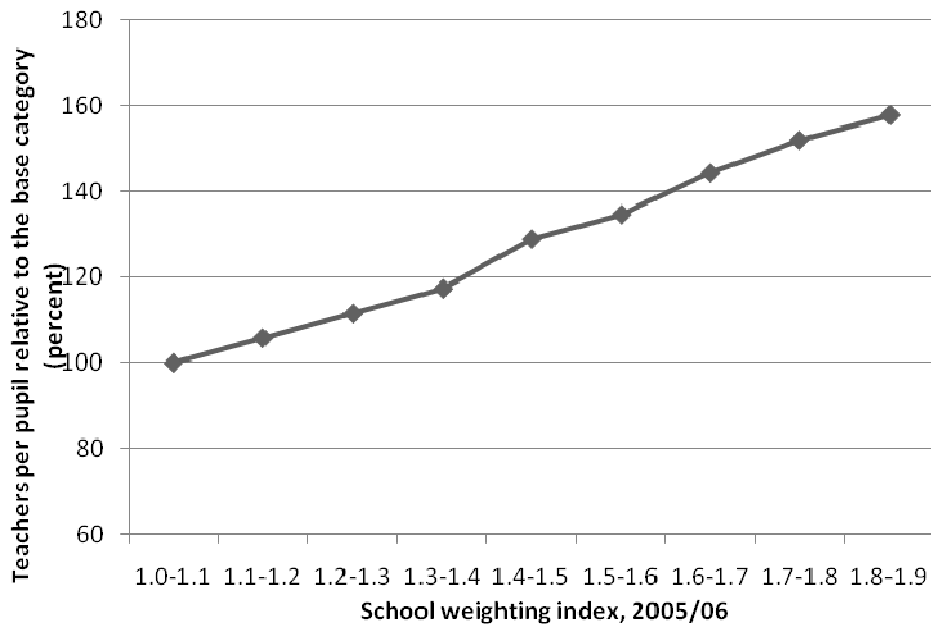


Figure 5. Total support personnel per teacher, 2006/07, by school weighting index

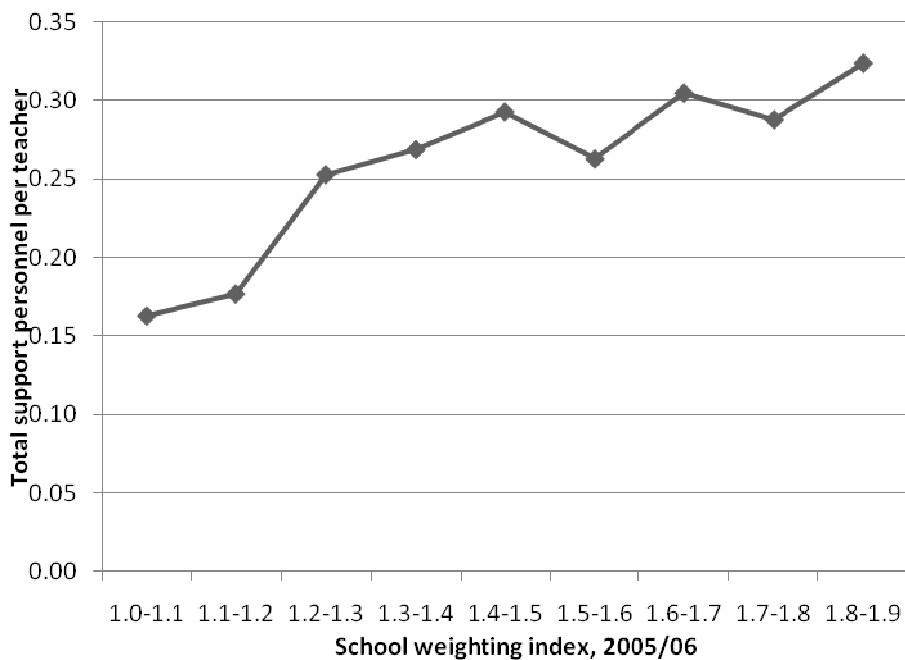


Figure 6. CITO test scores, 2006, by school weighting index

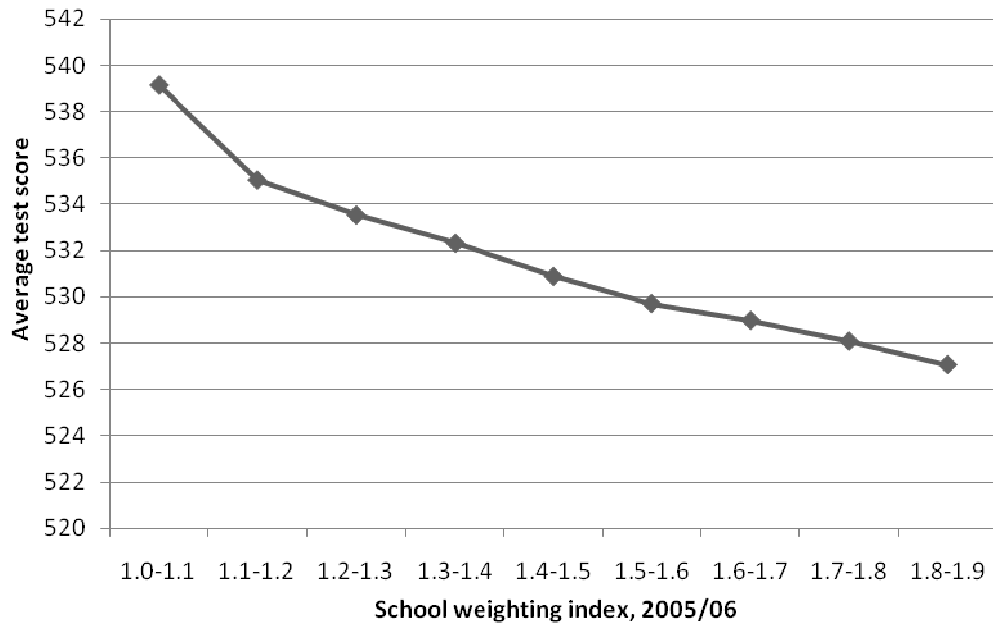


Figure 7. Overall quality by school weight index

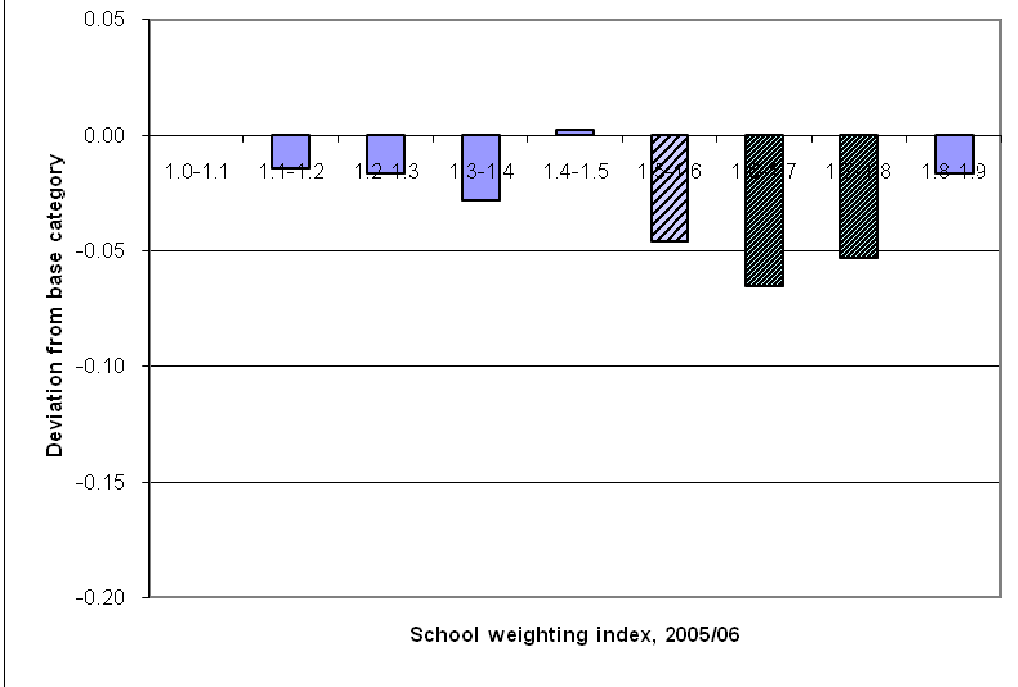


Figure 8. Student-related component of school quality by school weighting index

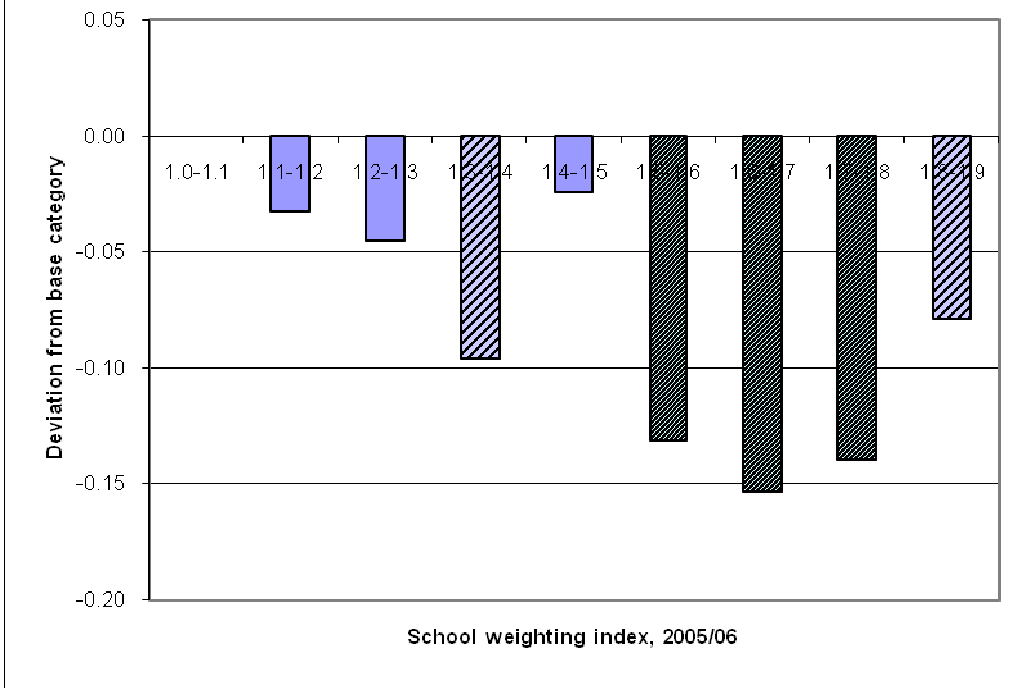


Figure 9. School-related component of school quality by school weighting index

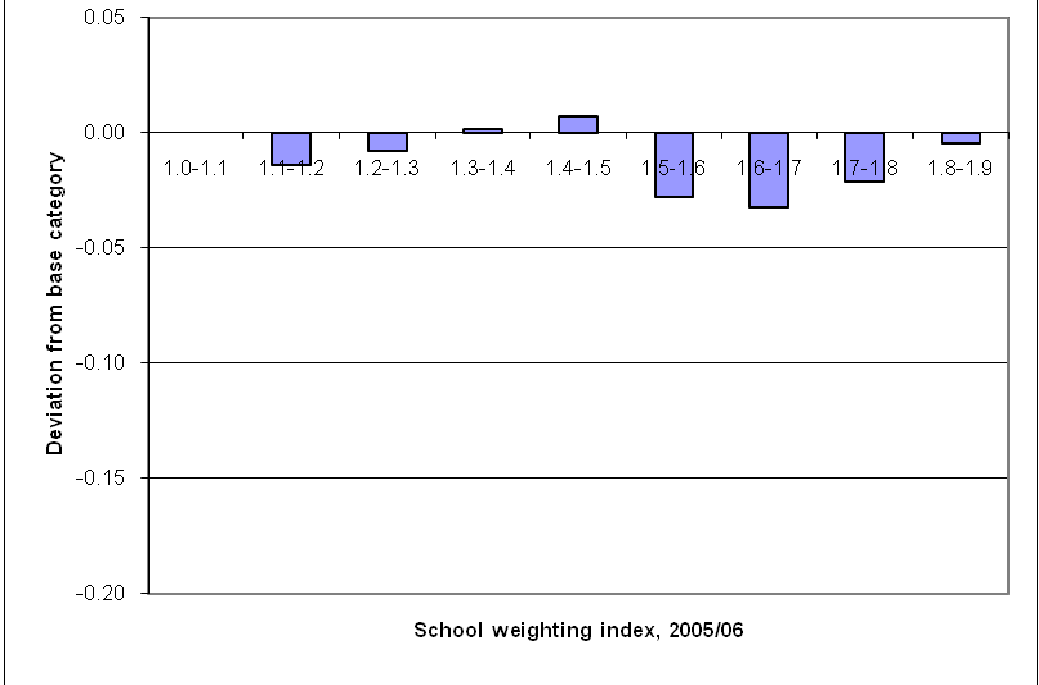


Figure 10. Teacher-related component of school quality by school weighting index

