

THE QUALITY GAP: A STUDY OF NONPROFIT AND COMMERCIAL CHILD CARE CENTRES IN CANADA

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INTRODUCTION

There are differences in the level of classroom quality provided in nonprofit and commercial child care centres - differences that may be relevant for policy and for the construction of a universally accessible, developmentally-oriented system of early learning and care in Canada. The purpose of this paper is to explore various hypotheses about the nature of these differences, using the You Bet I Care! data set collected in 1998.

Comparison of the relative performance of non-profit and for-profit child care centres has become especially relevant since the federal government announced its intention to build a national child care system in co-operation with the provinces and territories. The federal government and the provinces face a path-setting decision about whether to concentrate resources on non-profit agencies in building this child care system, or to direct public resources to both nonprofit and commercial agencies. This data set allows us to examine differences in the quality of child care provided by non-profit and for-profit child care centres, and to explore hypotheses about the reasons for quality differences. There may be other differences (access to capital funding, speed in establishing new facilities, responsiveness to parent concerns, etc) between non-profit and commercial centres, but we cannot examine them with this data set.

The You Bet I Care! data set provides data about 325 child care classrooms in 224 centres across Canada, including onsite observations of quality and considerable information about staff, director and children. The two main measures of quality in this data set are the ITERS (Infant-Toddler Environment Rating Scale) and ECERS-R (Early Childhood Environment Rating Scale – Revised) scores, which are global measures of the developmental potential in the classroom (the environment fostering quality interactions), and the Caregiver Interaction Scales (CIS) which focus on the nature of the interactions between the lead teacher and children in the room. Because we are more interested in overall classroom quality, we focus almost exclusively on the ITERS and ECERS measures.

There are seven subscales of the ITERS and ECERS scores, covering different aspects of classroom and centre quality. To simplify the analysis, we treat the 7-point ITERS and ECERS scales as equivalent measures of quality, so that we can pool together both infant/toddler and preschool classrooms. We treat the ITERS/ECERS score as one measure (and for convenience we express this score as a percentage measure)¹.

We seek to answer a number of questions using the data:

1. Is there evidence, in the raw data from You Bet I Care! (YBIC), that there are significant quality differences between nonprofit and commercial centres? If so, what is the magnitude of these apparent differences?

¹ In percentage terms, 33% is minimal quality, 67% is good, and 100% is excellent quality, corresponding to scores of 3, 5 and 7 on the original ITERS or ECERS scales.

2. Are there quality differences on every subscale of the ITERS/ECERS measurement, or only on some?
3. Are there quality differences between nonprofit and commercial centres in every province, or only some?
4. Are there differences in the quality performance of different subtypes of commercial centres? Of different subtypes of nonprofit centres?
5. Auspice appears to affect child care quality, but it is not clear why this is so. It has been hypothesized that nonprofit centres have different amounts of resources, serve a different clientele, and make different quality-enhancing input choices than for-profit centres. All of these factors combine to produce different quality. To begin to look at this set of hypotheses, we can ask: What are the average differences in these quality-affecting factors between nonprofit and commercial centres?
6. The ultimate question is why; why do we observe quality differences between nonprofit and commercial centres? In particular, are quality differences largely due to the additional financial resources available to nonprofit centres? Or, are there still quality differences remaining when resources have statistically been held constant? Further, are the quality differences affected by the different clientele that nonprofits may serve. Or, are there still quality differences when differences in clientele are held statistically constant? Finally, are quality differences also due to the different decisions that nonprofits make about how their children should be cared for (e.g., child-staff ratio, group size, education levels of staff, etc.)? Overall, when we statistically control for differences in resources received, clientele served and inputs chosen, are there still differences between commercial and nonprofit classrooms? And how do we interpret these results?
7. The final question we address is about the wages paid to caregivers in child care centres. For a long time, there has been good evidence that wages in nonprofit centres are considerably higher than wages in commercial centres. The question is how should we interpret this. One alternative is to believe that nonprofit centres overpay their staff. In other words, nonprofit centres are able, for various reasons, to attract more resources than commercial centres. Perhaps, workers in nonprofit centres reap the benefit of this in relatively fat pay packets for no extra effort or ability. On the other hand, it might be that the higher wages in nonprofits are a form of “efficiency wages” – extra pay which encourages extra effort, or rewards extra ability, which is reflected in extra quality in the classroom. Higher wages would then reflect the mission of nonprofits to produce higher quality care. We can test this issue with wage regressions. The relevant question is: after controlling for human capital differences that normally affect wages, are remaining wage differences due simply to nonprofit status, or are they due to the higher quality these workers produce in nonprofit classrooms?

Overall conclusions are drawn in the final section of this paper.

ANSWERING THE QUESTIONS ABOUT NONPROFIT CHILD CARE

- 1. Is there evidence, in the raw data from You Bet I Care! (YBIC), that there are significant quality differences between nonprofit and commercial centres? If so, what is the magnitude of these apparent differences?**

The combined ITERS/ECERS score across all 325 classrooms observed in YBIC is 60.1%. For-profit classrooms scored an average of 55.4 and nonprofits an average of 62.0 (we could say that the difference in quality is 6.6 percentage points, or that quality is over 10% higher in the nonprofit classrooms). The difference is statistically significant ($t = 2.92$). The differences taking infants and toddlers separately were somewhat larger, and quality was lower; commercial centres scored 50.2 and nonprofits 59.0 (on the significance of the difference, $t = 2.02$). Taking preschoolers separately, commercial centres rated at 57.2 and nonprofits at 63.8 ($t = 2.51$).

For comparison, we can look at the main subscale of the Caregiver Interaction Scale (called “Sensitivity”), which is also expressed as a percentage, teachers in rooms in commercial centres score lower than teachers in nonprofit centres on this measure of teacher empathy and interaction. The rating for commercial centres is 68.4 versus 78.1 for nonprofit centres ($t = 3.46$).

In other words, on average there appears to be a substantial difference in quality between commercial and nonprofit centres on average. This is not to say that every nonprofit has higher quality than every for-profit centre; what we have is two overlapping distributions of quality in these two types of centres. There are some poor quality nonprofits; there are some good quality commercial centres. However, for-profit centres are disproportionately represented among the lower-quality classrooms and nonprofits are disproportionately represented among the better-quality classrooms. The next table gives a good sense of the comparison between the entire distributions of quality scores, rather than just the average value of those scores. This table is based on the ITERS/ECERS scores, and, in this case, we show the raw score rather than expressing it as a percentage. The ITERS or ECERS score ranges from 1 to 7, with 1 being regarded as inadequate, 3 being minimal, 5 being good and 7 being excellent. Any classroom which scored from 1 to 1.99 is shown as having a score of 1. Any classroom which scored from 2.0 to 2.99 is shown as having a score of 2. And so on.

TABLE 1
INTEGER VALUES OF QUALITY (1-7) BY AUSPICE

ITERS/ECERS quality in integers	commercial	nonprofit	Total
1	2	3	5
	40.00	60.00	100.00
	2.15	1.29	1.54
2	9	10	19
	47.37	52.63	100.00
	9.68	4.31	5.85
3	25	50	75
	33.33	66.67	100.00
	26.88	21.55	23.08
4	33	70	103
	32.04	67.96	100.00
	35.48	30.17	31.69
5	20	73	93
	21.51	78.49	100.00
	21.51	31.47	28.62
6	4	26	30
	13.33	86.67	100.00
	4.30	11.21	9.23
Total	93	232	325
	28.62	71.38	100.00
	100.00	100.00	100.00

Pearson $\chi^2(5) = 10.7280$ Pr = 0.057

Notes: First figure in each cell is the absolute number of classrooms at each level of quality. The second figure in each cell is the row percentage; the third figure is the column percentage. Quality on the ITERS or ECERS scale is measured on a scale of 1 to 7, with 1 being inadequate quality, 3 being minimal, 5 being good, and 7 being excellent.

The table shows, in the bottom row, that 28.6% of all classrooms observed in this study are in commercial centres, while 71.4% of classrooms are in nonprofits. If quality were randomly distributed across classrooms, we would anticipate about 29% of classrooms at each quality level (1 to 7) would be commercial and about 71% would be nonprofit. However, even though commercial centres span the range of quality levels from 1 to 6, and there are few in the two lowest categories, they are overrepresented in quality levels 1 through 4. Nonprofits span the range of quality levels too, from level 1 through to 6. However, the bulk of nonprofits are in the higher ranges (73% from 4-6 compared to 61% of for-profits), being overrepresented at quality levels 5 and 6.

Two statements are simultaneously true. First, the distribution of nonprofits shows a shift towards higher quality. Second, there is a considerable (but inadequate) percentage of both commercial and nonprofit centres offering good quality care (5 or better) – about 26% of commercial centres offer care at this level compared to about 43% of nonprofit classrooms.

It is the task of the rest of this working paper to try to explore and explain these observed quality differences between for-profit and nonprofit child care.

2. Are there quality differences on every subscale of the ITERS/ECERS measurement, or only on some?

There are seven subscales of ITERS/ECERS. On the ECERS-R scale they are known as Space and Furnishings, Personal Care Routines, Language-Reasoning, Activities, Interaction, Program Structure and Parents and Staff. On the ITERS scale, they are known as Furnishings and Displays for Children, Personal Care Routines, Listening and Talking, Learning Activities, Interaction, Program Structure and Adult Needs. Each one of these sub-scales includes between 3 and 10 specific items scored from 1 to 7.

Furnishings includes making available, taking care of, arranging and using the furniture, storage shelves and display space. Personal Care includes all routines associated with the comfort, health and welfare of the children, especially diapering, rest and meals. Language-reasoning includes the use of materials, activities and teaching interactions to help children communicate in words and to use relationships basic to thought – such as size relationships, cause and effect, steps in a sequence, etc. Play-Learning Activities include fine-motor and creative activities and materials such as those used in art, block building, dramatic play, nature and science. Interaction includes the supervision of gross-motor activities (climbing, running, etc.), general supervision and discipline of children, warmth and respect in staff-child interactions and the encouragement of positive interactions among children. Program Structure includes the planning for children’s needs and the balance between structure and flexibility in the daily schedule, in free play, in group time, and in provision for children with disabilities. Parents and Staff includes issues such as the information provided to parents, communication with parents, parent inputs to decision-making, provisions for personal needs of staff, provision for professional needs of staff, the degree of interaction and communication among staff concerning children, supervision of staff and opportunities for professional growth.

Combining the ITERS and ECERS-R scores and looking at differences across auspice, we find the following pattern:

**TABLE 2
QUALITY DIFFERENCES BETWEEN NONPROFIT AND COMMERCIAL CLASSROOMS, BY ITERS/ECERS SUBSCALE**

Sub-scale	Percentage point difference (Nonprofit – Commercial)	t-statistic
Furnishings	4.3	1.63
Personal Care	6.9	2.35
Language-Reasoning	6.5	2.05
Play-Learning Activities	2.6	1.07
Interaction	8.3	2.66
Program Structure	1.7	0.51
Parents and Staff	18.6	7.32

Nonprofits provide, on average, higher quality according to every sub-scale, although the differences are not statistically significant for Play-Learning Activities, Program Structure, or Furnishings. The quality differences in treatment of parent and staff needs are particularly large.

3. Are there quality differences between nonprofit and commercial centres in every province/territory, or only some?

Using the percentage form of the ITERS/ECERS scores, the following table shows province and territory differences in quality, on average.

**TABLE 3
QUALITY DIFFERENCES BETWEEN NONPROFIT AND COMMERCIAL
CLASSROOMS, BY PROVINCE OR TERRITORY**

Province	Percentage point difference (Nonprofit – Commercial)	t-statistic	Number of nonprofit rooms	Number of commercial rooms
British Columbia	0.002	0.0004	35	7
Alberta	15.0	4.64	29	20
Saskatchewan	n.a.	n.a.		
Ontario	3.94	0.73	34	24
Quebec	17.1	2.84	42	6
New Brunswick	2.78	0.64	31	29
Yukon	13.6	2.06	14	7

The province-by-province results vary widely, but it is difficult to know how to interpret this. Of course, provincial/territorial jurisdictions differ widely in the financial and program support they give to child care programs, and in how they regulate provision of child care services. Further, provinces/territories differ in child care subsidy systems (and therefore the mix of children in child care centres). And provinces and territories differ in cultural attitudes to children and child care, in wage and compensation levels in child care and competing occupations, and in many other ways. And, of course, the selection of the sample and the administration of the You Bet I Care! study differs across provincial/territorial jurisdictions. The quality differences in the above table reflect all of these influences.

Further, it should be carefully noted that the authors of the original YBIC study, writing up the study report, emphasized that the provincial/territorial sample sizes were not sufficiently large to have confidence in the individual jurisdiction results (or breakdowns of those results by auspice). It is pretty clear in the cases of British Columbia and Quebec, for instance, that the number of commercial rooms is quite small, relative to the number of nonprofit centres, so the commercial centres might comprise an unrepresentative select sample of commercial centres in the province. There are a small number of both nonprofit and commercial centres in the Yukon, but they represent close to the whole population of centres in the Whitehorse area, so problems of bias are less relevant.

Ignoring the province results for B.C. and Quebec, there is still considerable variation in the story that individual provinces and territories seem to tell about auspice. In Alberta and the Yukon, there are dramatic quality variations. In Ontario and New Brunswick, these quality differences are smaller and not statistically dependable. Further studies of child care quality should seek to “unpack” these apparent provincial/territorial differences.

4. Are there differences in the quality performance of different subtypes of commercial centres? Of different subtypes of nonprofit centres?

Commercial centres may be sole proprietorships, partnerships, incorporated centres, or may not have indicated their type (other). The table below shows that quality appears to be related to sub-type of care. Amongst commercial care, sole proprietorships provide best care. Child care businesses that are incorporated (which may be single centres or part of a chain) provide lower quality care. Partnerships and other commercial providers provide much worse quality on average. The average quality of care in different types of nonprofit care is more uniform and typically at a higher level of quality.

**TABLE 4
AVERAGE AND DISPERSION OF QUALITY SCORES BY SUBTYPE
OF AUSPICE**

Type of Centre	Average ITERS/ECERS score	Dispersion of quality – standard deviation	Number of rooms represented
Commercial			
Single proprietorship	61.0	15.6	29
Partnership	43.2	23.0	10
Corporation	56.7	15.3	44
Other commercial	45.6	21.2	10
Nonprofit			
Independent nonprofit	62.3	19.2	130
Parent co-operative	60.3	15.7	61
Other nonprofit	63.7	21.3	41

5. **Auspice appears to affect child care quality, but it is not clear why this is so. It has been hypothesized that nonprofit centres have different amounts of resources, serve a different clientele, and make different quality-enhancing input choices than for profit centres. All of these factors combine to produce different quality. To begin to look at this set of hypotheses, we can ask: What are the average differences in these quality-affecting factors between nonprofit and commercial centres?**

The table below shows the differences and similarities in the average values of key variables by auspice. These are variables likely to affect quality provided in the centre. Many of these variables have been chosen deliberately by centres; differences therefore reflect the different motivations and objectives of commercial and nonprofit directors and owners.

Ratios, Group Size, Training and Wages

There are some apparent patterns in the table. There are lower ratios of children to staff in nonprofit classrooms. Group sizes are approximately equal across classrooms of different auspice; average group sizes are all well within the range of acceptable group sizes. About three-quarters of lead teachers (i.e., the observed staff member) in both commercial and nonprofit classes have ECE-specific training at the level of a college diploma or certificate. However, nonprofit classes have more lead teachers with post-college certificates or university training for ECE. The lead teachers in nonprofit classes are likely to earn more per hour (\$11.92 vs. \$9.14).

Directors, Staff Education, Turnover

Child care centre directors are likely, no matter what the auspice, to have at least a college diploma or certificate. However, about 20% of commercial directors have a university degree compared to 28% of nonprofit directors. Looking at the overall education of centre staff, a much higher percentage (63% to 49%) have at least a two-year ECE in nonprofit centres. Annual turnover is lower in nonprofit centres. Many more commercial centres are very new – two years in operation or less.

Access to Financial Resources

Access to subsidized rent or utilities varies dramatically by auspice; only 1% of commercial centres attract these subsidies, compared to 44% of nonprofits. A similar pattern exists for wage and operating grants from provincial/territorial governments (nonprofits receive 18.3% of revenues from this source compared to about 5.4% for commercial centres).

Child Clientele

Children in the two types of centres show some differences by auspice. 44.4% of children in nonprofit centres receive low-income subsidies compared to 35.8% in commercial centres. The ages of children served varies too; 39% of children in nonprofits are infants or toddlers; 27% of children in commercial centres are in the same age range.

TABLE 5
AVERAGE VALUES OF KEY VARIABLES BY AUSPICE

VARIABLES	COMMERCIAL (mean values)	NON-PROFIT (mean values)	OVERALL SAMPLE MEANS
ITERS/ECERS score (percent)	55.4	62.0	60.1
<i>Classroom Variables</i>			
Child-staff ratio	5.20	4.72	4.86
Square of child-staff ratio	31.86	27.11	28.47
Group size	9.65	9.51	9.55
Square of group size	114.53	113.47	113.77
<i>Teacher Variables</i>			
Training of main classroom teacher: ECE - none or less than one year	0.19	0.15	0.15
ECE – college	0.74	0.71	0.65
ECE – post-college cert.	0.05	0.07	0.14
ECE – university	0.01	0.07	0.05
Gross wage per hour - observed teacher	9.14	11.92	11.16
<i>Centre Variables</i>			
Director - high school graduation or less	0.09	0.08	0.07
Director - one, two or three years college	0.69	0.55	0.56
Director - post-college certificate	0.02	0.08	0.06
Director - B.A. or more	0.20	0.28	0.31
Percent of staff with two year ECE or more	48.9	62.8	58.8
Annual staff turnover (percent)	11.3	8.7	9.5
Centre has been in operation for two years or less	0.14	0.03	0.06
Centre is unionized	0.01	0.25	0.18
<i>Financial Resource Variables</i>			
Subsidized or free rent/utilities	0.01	0.44	0.32
Percent of revenues from wage and/or operating grant	5.35	18.32	14.83
Estimated monthly revenue per child	477.68	593.77	560.55
<i>Child Variables</i>			
Percent of children in centre receiving income-related subsidy	36.1	44.6	41.96
Infant classroom	0.17	0.21	0.20
Toddler classroom	0.10	0.18	0.15
Preschool classroom	0.73	0.61	0.65
Percent of special needs children	5.6	6.1	6.0

<i>Other variables</i>			
British Columbia	0.08	0.15	0.13
Alberta	0.22	0.13	0.15
Saskatchewan	0.00	0.20	0.14
Ontario	0.26	0.15	0.18
Quebec	0.06	0.18	0.15
New Brunswick	0.31	0.13	0.18
Yukon Territory	0.08	0.06	0.06

6. **The ultimate question is why; why do we observe quality differences between nonprofit and commercial centres? In particular, are quality differences largely due to the additional financial resources available to nonprofit centres? Or, are there still quality differences remaining when resources have statistically been held constant?**

Further, are the quality differences affected by the different clientele that nonprofits may serve. Or, are there still quality differences when differences in clientele are held statistically constant? Finally, are quality differences also due to the different decisions that nonprofits make about how their children should be cared for (e.g., child-staff ratio, group size, education levels of staff, etc.)?

Overall, when we statistically control for differences in resources received, clientele served and inputs chosen, are there still differences between commercial and nonprofit classrooms? And how do we interpret these results?

Table 6 below presents four different regressions that help to explain why quality varies from one child care classroom to another across Canada in the YBIC data set. This table shows the way in which quality varies when each of a wide range of explanatory variables varies. In other words, these are the results from regressing the measured quality in a classroom against a set of variables that are presumed to affect quality. The results listed under the four columns on the right of the table are estimates of the effect of a one unit change in the particular variable listed in the left-hand column on the dependent variable. In each case, the dependent variable is ITERS/ECERS measured as a percentage.

The first variable in the left-hand column of the table is “Nonprofit status of centre”. The estimated coefficient is shown as 7.55 and, in brackets beside it, we see that it has a t-statistic of 3.54 (i.e., highly significant). We can interpret this result as saying that, in the context of a regression of child care quality on nonprofit status and a set of provincial/territorial dummy variables (and no other variables), nonprofit status is associated with an increase in classroom quality of about 7.5 percentage points, holding province/territory constant.

“Holding province/territory constant” means holding constant (by statistical means) the average quality variation that is associated with moving from one province or territory to another. Clearly, there are important differences in average quality that are associated with location. For instance, being in Alberta rather than B.C. (B.C. is the omitted category) means quality is lower by about 6 percentage points; being in Saskatchewan rather than B.C. means that quality is lower by nearly 26 percentage points, and so on. Since a regression measures the separate effects of different explanatory variables, the combined effects are additive. So, for instance, being in Alberta means a drop of 6 percentage points in quality, but being a nonprofit centre in Alberta would mean having average quality about 1.65 percentage points higher ($7.55 - 5.90 = 1.65$) than the average quality in B.C.

TABLE 6
THE EFFECT OF NONPROFIT STATUS ON CHILD CARE QUALITY
CONTROLLING FOR DIFFERENCES BETWEEN CLASSROOMS

EXPLANATORY VARIABLES	PROVINCE AND TERRITORY VARIABLES		PROV/TERR AND RESOURCES		PROV/TERR, RESOURCES AND CHILDREN		PROV/TERR, RESOURCES, CHILDREN, AND OTHER FACTORS	
	Estimates	(t-stats)	Estimates	(t-stats)	Estimates	(t-stats)	Estimates	(t-stats)
Non-profit status of centre	7.55**	(3.54)	6.78**	(3.09)	6.96**	(3.19)	3.94*	(1.81)
<i>Province/territory (B.C. is omitted category)</i>								
Alberta	-5.90*	(1.73)	-5.61*	(1.64)	-6.57*	(1.94)	-5.90*	(1.73)
Saskatchewan	-25.56**	(7.45)	-25.24**	(7.35)	-26.17**	(7.68)	-25.56**	(7.45)
Ontario	-13.60**	(4.12)	-14.56**	(4.34)	-15.15**	(4.53)	-13.60**	(4.12)
Quebec	-21.28**	(6.26)	-23.18**	(6.39)	-23.31**	(6.27)	-21.28**	(6.26)
New Brunswick	-25.53**	(7.73)	-24.36**	(7.18)	-23.97**	(7.00)	-25.53**	(7.73)
Yukon	-8.39*	(1.95)	-9.61**	(2.19)	-10.16**	(2.35)	-8.39*	(1.95)
<i>Financial Resources</i>								
Revenue available per child			0.009	(1.48)	0.012**	(1.98)	0.009	(1.58)
<i>Child Variables</i>								
Infants					-7.78**	(3.38)	-7.59**	(2.67)
Toddlers					-4.39*	(1.73)	-5.29**	(2.02)
Percent of children with special needs					0.132	(0.99)	0.186	(1.46)
Percent of children subsidized					0.018	(0.53)	0.034	(1.06)
<i>Inputs and Other Variables</i>								
Child-staff ratio							-4.56**	(2.38)
Square of child-staff ratio							-0.328**	(2.04)
Group size							2.64**	(3.40)
Square of group size							-0.098**	(3.25)
<i>Lead teacher's training (No ECE is omitted category)</i>								
ECE – college diploma							10.45**	(4.22)
ECE – post-college cert.							8.49**	(2.18)
ECE – university degree							9.66**	(2.25)
<i>Director's Education (high school or less omitted)</i>								
College diploma or certificate							7.05**	(2.08)
Post-college certificate							1.77	(0.37)
University degree							9.02**	(2.45)
Percent of staff with two-years ECE training							0.07*	(1.95)
Annual rate of staff turnover							-0.21*	(1.67)
Centre in operation for less than two years							-9.11**	(2.45)
Constant	70.15**	(22.98)	65.89**	(15.71)	65.07**	(14.79)	46.55**	(5.03)
Number of observations	325		325		325		325	
Explanatory variables	8		9		13		26	
Adjusted R-squared	.259		.262		.284		.392	

** significant at 5% level

* significant at 10% level

Of course, this first regression, in the first column of results, is only the beginning of our investigation. Holding only province/territory constant does not necessarily give us a very precise estimate of the independent influence of nonprofit status on child care quality. There is a wide range of factors that are likely to influence the quality of care provided in a classroom.

Nonprofits will differ from commercial centres in a number of ways. First, nonprofit centres will attract more resources if they are perceived by sponsoring organizations and governments to be trustworthy and to be providing socially-needed services. This may make it easier for nonprofit centres to produce quality care than for commercial centres. Second, nonprofit centres will serve a somewhat different population of children presuming that they have a stronger mission to provide socially-needed services than do commercial centres. Third, nonprofits may make different input choices than commercial centres if they have a stronger mission to produce quality services. Finally, controlling for all these differences, nonprofit status may influence quality in ways not fully captured by these explicit variables.

In the regressions in Table 6, we control progressively for each of these groups of variables. The second column of results (third column in the table) controls for differences amongst centres in the revenue available per child served, in addition to controlling for province/territory. Revenue per child is calculated as the sum of the preschool fee charged by the centre, the percent of revenues provided by operating and wage grants, and a supplement of 10% for those centres that have rent and/or utilities subsidized by a sponsoring organization. Non-profit status in this regression is found to have only a slightly smaller coefficient (6.78 vs. 7.55) than before and still to be strongly significant. In other words, nonprofit status explains some important variation in quality even when resource differences are statistically eliminated.

The third column of results (fourth column in the table) controls for differences between classrooms and centres in the types and ages of children served). The composition of children served may reflect the social mission of the nonprofit sector, and may make it more difficult to produce a high level of child care quality. As we saw above, nonprofit centres have substantially more infant and toddler classrooms, a slightly larger percentage of special needs children and a substantially larger percentage of low-income subsidized children. This regression controls for each of these factors, in addition to the controls for province/territory and revenue available per child. The results indicate that infant and toddler care appear to be more difficult to do well; when the negative effect of these age groupings is controlled (along with the other child variables), the effect is to increase slightly the pure impact of nonprofit status on quality (6.96 vs. 6.78).

The fourth and final column of results shows the impact of nonprofit status when a wide variety of quality-affecting variables (e.g., child/staff ratio, group size, level of ECE-specific training, level of education of the director, average annual rate of staff turnover, etc.) are held constant. As was shown in Table 5 above, not only are financial resources and the types of children served different between nonprofit and commercial centres, but many other quality-affecting variables are at different levels. For instance, the education levels of staff and of directors are, on average, higher in nonprofit centres, the number of children cared for by each staff member is lower, the rate of staff turnover is lower, etc. These differences are not accidental; nonprofit centres clearly interpret their mission to include the provision of higher quality care, and they choose inputs that are likely to deliver this quality. For this reason, it is inappropriate to consider the estimated coefficient on “nonprofit status of centre” (3.94) to be the full measure of the impact of nonprofit status. However, holding these inputs constant allows us to discover that the positive impact of nonprofit status on quality is persistent, even when a wide range of variables are held constant. This suggests that there are unobserved quality-enhancing factors associated with nonprofit status (additional effort and dedication, perhaps, or the

encouragement and support given by the sponsoring organization) that explain the statistical significance of nonprofit status in this final regression.

- 7. The final question we address is about the wages paid to caregivers in child care centres. For a long time, there has been good evidence that wages in nonprofit centres are considerably higher than wages in commercial centres. The question is: “How should we interpret this?”. One alternative is to believe that nonprofit centres overpay their staff. In other words, nonprofit centres are able, for various reasons, to attract more resources than commercial centres. Perhaps, workers in nonprofit centres reap the benefit of this in relatively fat pay packets for no extra effort or ability. On the other hand, it might be that the higher wages in nonprofits are a form of “efficiency wages” – extra pay that encourages extra effort, or rewards extra ability, which is reflected in extra quality in the classroom. Higher wages would then reflect the mission of nonprofits to produce higher quality care. We can test this issue with wage regressions. The relevant question is: after controlling for human capital differences that normally affect wages, are remaining wage differences due simply to nonprofit status, or are they due to the higher quality these workers produce in nonprofit classrooms?**

The first regression below is a standard “human-capital” wage regression, seeking to explain variations in the gross wage per hour paid to centre-based child care workers by correlating the wage differences with differences in worker characteristics. We observe that nonprofit status, for instance, apparently “causes” a \$1.41 increase in the average wage of a child care worker holding all other factors constant. These other factors include unionization (which pushes up wages by \$2.21 per hour), the level of ECE-specific training of the staff member (a college certificate or diploma in ECE increases wages by \$0.71, a post-college certificate or diploma increases wages by \$0.89, but university-level ECE training is not statistically significantly rewarded). Each year of experience in this child care centre (i.e., cntrexpyr) will, on average, be rewarded with an extra \$0.18 per hour, being a teacher or supervisor rather than an assistant teacher is rewarded with \$0.94 per hour. Of course, different provinces have different wage levels because of province-wide factors; this regression controls for this type of wage variation by including a set of province-specific dummy variables (British Columbia is the omitted province, so the estimated coefficient for each province or territory shows the average wage effect of being in “X” province rather than in B.C. Some other variables are included in the regression (recent professional development, number of full-time staff in the centre), but are not statistically significant in explaining child care wages.

TABLE 7

DETERMINANTS OF THE HOURLY WAGES OF CENTRE-BASED CHILD CARE WORKERS, WITH SPECIAL ATTENTION TO NONPROFIT STATUS WITHOUT CONTROLS FOR OBSERVED QUALITY

Source	SS	df	MS	Number of obs = 325		
Model	2685.89097	15	179.059398	F(15, 309)	=	30.00
Residual	1844.5189	309	5.96931683	Prob > F	=	0.0000
-----				R-squared	=	0.5929
-----				Adj R-squared	=	0.5731
Total	4530.40987	324	13.9827465	Root MSE	=	2.4432

grosswagehr	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
nonprofit	1.415817	.3495906	4.05	0.000	.7279374	2.103696
union	2.213568	.3881028	5.70	0.000	1.44991	2.977227
neweceeduc2	.7144035	.3938291	1.81	0.071	-.0605225	1.48933
neweceeduc3	.8949521	.6442962	1.39	0.166	-.3728108	2.162715
neweceeduc4	.1008421	.7081836	0.14	0.887	-1.29263	1.494314
profdev	.5005663	.3398498	1.47	0.142	-.1681463	1.169279
cntrexpvr	.1885113	.0339188	5.56	0.000	.1217702	.2552524
staffft	-.0344039	.0343798	-1.00	0.318	-.102052	.0332442
teachsuper	.9497539	.5002159	1.90	0.059	-.0345064	1.934014
alberta	-3.451682	.5464713	-6.32	0.000	-4.526957	-2.376406
saskatchewan	-3.115505	.5279275	-5.90	0.000	-4.154293	-2.076718
ontario	.2946841	.5279302	0.56	0.577	-.7441088	1.333477
quebec	-2.420862	.5661735	-4.28	0.000	-3.534906	-1.306819
newbrunswick	-5.485916	.5297663	-10.36	0.000	-6.528322	-4.443511
yukon	-1.063447	.6725011	-1.58	0.115	-2.386708	.2598139
_cons	9.523556	.7032568	13.54	0.000	8.139778	10.90733

Standard human-capital wage regressions for child care workers have been estimated before (e.g., Cleveland and Hyatt, 2001) but those examinations of wage determinants have not been able to control for quality. Presumably, education and experience, for instance, are rewarded with higher wages primarily because those workers with more ECE-specific education and more experience are better able to deliver quality child care services for children. With the You Bet I Care! data set, we are able to include explicit measures of classroom quality in a wage regression; we do this in Table 8 below.

The effect is to confirm that quality matters in determining centre-based child care worker wages. The ITERS/ECERS classroom-based quality measure is given the name “percent”. This variable is significant at the 10% level (90% confidence); an increase of 1 percentage point in measured quality is associated with an increase of about 1.5 cents per hour in wages. A range of other factors are still important in determining wages, of course (although ECE-specific education and quality are strongly correlated, so the education variables are no longer statistically significant on their own). Most important from our point of view, nonprofit status appears to have a strong positive impact on wages, independent of quality differences. This appears to suggest that, even controlling for quality differences, nonprofit child care workers are rewarded with an extra \$1.33 per hour. This may suggest that child care workers in nonprofit centres are creaming off some of the extra resources that are available to nonprofit child care centres; however further investigation is needed before we can reach this conclusion.

TABLE 8
DETERMINANTS OF THE HOURLY WAGES OF CENTRE-BASED CHILD CARE WORKERS, WITH
SPECIAL ATTENTION TO NONPROFIT STATUS HOLDING OBSERVED QUALITY CONSTANT

Source	SS	df	MS	Number of obs = 325		
Model	2702.78111	16	168.923819	F(16, 308)	=	28.47
Residual	1827.62876	308	5.93385961	Prob > F	=	0.0000
				R-squared	=	0.5966
				Adj R-squared	=	0.5756
Total	4530.40987	324	13.9827465	Root MSE	=	2.436

grosswagehr	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
percent	.0153074	.0090731	1.69	0.093	-.0025456	.0331604
nonprofit	1.333483	.3519506	3.79	0.000	.6409517	2.026015
union	2.257741	.3878332	5.82	0.000	1.494604	3.020879
newceeduc2	.5206021	.4091153	1.27	0.204	-.2844124	1.325617
newceeduc3	.7864506	.6455911	1.22	0.224	-.4838763	2.056778
newceeduc4	-.085144	.714631	-0.12	0.905	-1.491321	1.321032
profdev	.4384243	.3408351	1.29	0.199	-.2322355	1.109084
cntrexpvr	.1857919	.0338563	5.49	0.000	.119173	.2524109
staffft	-.0405014	.0344675	-1.18	0.241	-.108323	.0273203
teachsuper	.9659357	.4988203	1.94	0.054	-.015591	1.947462
alberta	-3.348025	.5482991	-6.11	0.000	-4.426911	-2.269139
saskatchewan	-2.750477	.5690904	-4.83	0.000	-3.870274	-1.63068
ontario	.5512993	.5478957	1.01	0.315	-.5267929	1.629392
quebec	-2.099056	.5958448	-3.52	0.000	-3.271497	-.9266145
newbrunswick	-5.121895	.5705607	-8.98	0.000	-6.244584	-3.999205
yukon	-.9534791	.6736616	-1.42	0.158	-2.27904	.372082
_cons	8.672523	.8637588	10.04	0.000	6.972908	10.37214

To investigate further, for Table 9, we create a new variable – NPquality – which is included in the regression below. In effect, the quality variable has been split in two. “Percent” picks up the general effect on wages of a unit increase in quality. A new variable “NPquality” picks up the specific effect of a unit increase in quality in a nonprofit centre. The table below shows that it is compensation for quality in nonprofit classrooms only that is positively correlated with the wage level of child care workers. In other words, there is no extra compensation for quality given in commercial classrooms. In nonprofit classrooms, a 1 percentage point increase in quality is associated with about a 2.5 cent increase in wages per hour. Further, nonprofit status no longer has any independent effect on wage levels. This suggests that the overall nonprofit wage premium which we observe in child care centres is made up of a number of different factors (including unionization, differences in education, experience, etc.). However, there is no clear evidence that nonprofit status on its own drives up wages, except through its influence on quality.

This is, it should be remembered, preliminary evidence on the effect of nonprofit status. Further work will probe these issues further, aided by the commentary and suggestions of others.

TABLE 9
DETERMINANTS OF THE HOURLY WAGES OF CENTRE-BASED CHILD CARE WORKERS, WITH
SPECIAL ATTENTION TO NONPROFIT STATUS AND QUALITY IN NONPROFIT CLASSROOMS

Source	SS	df	MS	Number of obs = 325		
Model	2721.34611	17	160.079183	F(17, 307)	=	27.17
Residual	1809.06376	307	5.89271582	Prob > F	=	0.0000
				R-squared	=	0.6007
				Adj R-squared	=	0.5786
				Root MSE	=	2.4275

grosswagehr	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
percent	-.0061697	.015105	-0.41	0.683	-.035892	.0235527
NPquality	.0302796	.0170593	1.77	0.077	-.0032883	.0638475
nonprofit	-.4233673	1.050097	-0.40	0.687	-2.489666	1.642931
union	2.257122	.3864864	5.84	0.000	1.496624	3.017619
newceeduc2	.475401	.4084891	1.16	0.245	-.3283915	1.279194
newceeduc3	.7142113	.644635	1.11	0.269	-.5542508	1.982673
newceeduc4	-.0805428	.7121539	-0.11	0.910	-1.481863	1.320778
profdev	.3894379	.3407708	1.14	0.254	-.281104	1.05998
cntrexpvr	.1903856	.0338379	5.63	0.000	.1238021	.2569691
staffft	-.0395587	.0343519	-1.15	0.250	-.1071538	.0280363
teachsuper	.8665615	.5002309	1.73	0.084	-.1177535	1.850876
alberta	-3.349269	.5463954	-6.13	0.000	-4.424422	-2.274115
saskatchewan	-2.637602	.5706683	-4.62	0.000	-3.760519	-1.514686
ontario	.6197826	.5473545	1.13	0.258	-.4572584	1.696824
quebec	-2.08163	.5938566	-3.51	0.001	-3.250174	-.9130856
newbrunswick	-5.121871	.5685792	-9.01	0.000	-6.240676	-4.003065
yukon	-.9480794	.6713289	-1.41	0.159	-2.269068	.3729087
_cons	9.978329	1.132312	8.81	0.000	7.750254	12.2064

SUMMARY AND CONCLUSIONS

There is evidence that nonprofit and for-profit child care centres behave differently; in fact, on average, the overall quality in nonprofit centres appears to be about 10 percent higher (6.6 percentage points higher). At the same time, it is evident that quality is insufficiently high in both nonprofit and for-profit centres (a score of 5 – which would be a score of 67% on our scale - on the ITERS-ECERS scale is associated with overall quality good enough to promote child development).

Not-for-profit centres are managed by an elected Board of Directors, often with parents involved; a for-profit service is managed by a person or corporation. Non-profits must reinvest any surplus in the organization; owners of for-profit organizations can keep it. In non-profit organizations, decisions are made or approved by a board of directors and members are not permitted to have financial interest in the organization; for-profit owners have sole discretion to make decisions regarding policy and administration. However, the link between these characteristics and the quality of care received by children has not been clearly understood.

What we do in this paper is to pose and seek to answer a series of questions about the nature of quality differences between nonprofit and for-profit child care centres in Canada as measured by the You Bet I Care data set collected in 1998 (the most recent such data available for English Canada). Although some of these questions focus on the descriptive details of

differences, the latter questions focus on explanation of these quality differences. We summarize the conclusions in point form below.

1. As measured by the ITERS/ECERS scale, commercial centres provide care that is statistically significantly lower in quality than care provided in nonprofit centres. This is true for infant and toddler classrooms, and for preschool classrooms. It is true for an overall measure of classroom quality (the ITERS or ECERS measure) and it is true for a measure of the quality of care provided by the lead teacher in the classroom (the Caregiver Interaction Scale).
2. The dispersion of qualities of care is wide in both nonprofit and commercial child care centres. The general picture, however, is that commercial centres are disproportionately represented amongst the lower quality classrooms and nonprofits are disproportionately represented amongst the good quality classrooms. However, there is both poor quality and good quality care in nonprofit centres and in for-profit centres.
3. If we isolate areas in which the differences are greatest between nonprofit and commercial classrooms, we find that this is especially true for four of the subscales of the ITERS-ECERS measure - Personal Care, Language-Reasoning, Interaction and Parents and Staff. Personal Care includes diapering, rest and meals; Language-Reasoning includes interactions to help children communicate and reason; Interaction includes the nature of staff-child interactions; Parents and Staff includes communication with parents and provisions for staff training and personal needs.
4. The sample taken in the You Bet I Care! study was neither sufficiently large nor were response rates sufficiently uniform to allow clear conclusions about auspice patterns on a provincial/territorial level. However, there do appear to be important differences in auspice differences across jurisdictions, with strong cleavages between quality levels in nonprofits and for-profits in Alberta, Quebec and the Yukon, and smaller differences in British Columbia, Ontario and New Brunswick. Whether these differences are due to sampling variation, policy regimes, or other factors is not clear. Further study of provincial/territorial quality differences in child care centres is warranted.
5. Commercial centres can be sole proprietorships, partnerships or incorporated companies. Partnerships have particularly low quality on average; corporate care is also of lower average quality. Care in sole proprietorship centres (29 classrooms out of 93 commercial classrooms) is more similar in quality to that provided in nonprofit centres.
6. It has been hypothesized that quality differences between nonprofit and commercial classrooms may occur because nonprofit centres are able to attract greater financial resources, either from governments, from parent fees, or from donations. This is complemented by an hypothesis which suggests that additional resources are matched by additional costs. In particular, nonprofit centres have, throughout their history, tended to provide care that absorbs more financial resources, either because they

serve both younger and older children, because they serve more children from low-income families, or because they serve more children with special needs. Finally, an alternative hypothesis, which may also complement the story about financial resources, suggests that nonprofits, by their nature and history, have a stronger mission to provide high quality care than do commercial organizations seeking to earn a profit. Even when financial resources and children served are similar, so this hypothesis goes, nonprofit organizations will seek to hire better educated staff and directors, will maintain better ratios of staff to children, and in other ways will direct more inputs to quality improvement than will commercial centres.

7. We shed some light on these hypotheses (which are partially competing and partially complementary) by looking at the average values of a wide range of variables for commercial classrooms, nonprofit classrooms, and for the entire sample. The pattern is consistent with this group of hypotheses. Nonprofit centres receive more overall revenue per child, including grants and donated rent or utilities than commercial centres (partially this reflects greater trust accorded to nonprofits by potential donors). They also are considerably more likely to provide infant and toddler care, to provide care for low-income subsidized children and somewhat more likely to provide care for special needs children. However, it is also true that nonprofit classrooms generally have higher educated staff, have higher paid staff, have better educated centre directors, and have more favourable staff-child ratios – all choices which are likely to enhance the provision of better quality care for children.
8. Regression analysis allows us to examine the separate effect of one factor on quality with other factors held statistically constant; this is necessary to making a judgement about whether nonprofit status is “causally” related to the quality of care provided. We consider four main categories of variables in addition to nonprofit/for-profit status: province/territory, financial resources, child variables, and inputs chosen by the centre to attempt to enhance quality. Abstracting from the influences of the particular province or territory, nonprofit status boosts a classroom’s overall quality score by 7.55 percentage points.
9. Controlling for the differential financial resources available to nonprofit centres (through fees, wage and operating grants and donated rent or utilities) in addition to the controls for province and territory, nonprofit status boosts quality scores by 6.78 percentage points. Of course, nonprofits not only have more financial resources, but also have higher costs. Controlling for differences in the child population served by nonprofit centres yields an estimate of 6.96 percentage points as the separate contribution of nonprofit status to quality in child care classrooms.
10. Adding in a wide range of inputs which are likely to enhance child care quality reduces the estimated separate effect of nonprofit status to 3.94 percentage points. This is the estimated contribution of nonprofit status, independent of the additional resources nonprofit centres attract,

independent of the effects on quality from the child population they serve, and independent of the effects from the greater inputs to quality that are chosen by nonprofit centres. An appropriate interpretation would be that there are unobservable or unmeasured factors associated with nonprofits that also contribute to quality. This could be unmeasured leadership ability of directors who are dedicated to their mission, extra effort provided by teachers, or extra organizational support and encouragement of sponsoring organizations for many nonprofits.

11. There is a further hypothesis about the behaviour of nonprofit organizations that has been advanced in scholarly literature. It is suggested that, because nonprofit organizations do not have the profit incentive, they may not effectively minimize costs. In fact, they may artificially raise wages of employees, with no positive impact on quality (this is described as employees capturing economic rents in nonprofit organizations). A competing hypothesis is that higher wages in nonprofit organizations are payments for higher ability or greater effort, both of which contribute to enhance child care quality. Estimation of wage regressions amongst the lead teachers in the You Bet I Care! classrooms in this study confirms that nonprofit status is correlated with higher gross hourly wages, other factors held constant. However, this supplement to staff pay is related to improved classroom quality; nonprofit status on its own plays no role in increasing wage levels once increased quality is accounted for.
12. The overall conclusions of this paper are that nonprofit status makes an important independent contribution to quality in child care centres. In fact, nonprofits differ from commercial centres in a number of important respects, including the ability to attract financial resources, the characteristics of children served and the inputs chosen by the centre to influence the quality of care provided. Each of these sets of factors does, in fact, affect the quality of care provided, classroom by classroom. However, nonprofit status continues to have an independent effect as well. The difference between commercial and nonprofit centres is the sum of all these effects. Finally, we examine the notion that nonprofits pay wages that are artificially high. We do not find support for this contention; rather we find that higher wages paid in nonprofits are associated with higher quality of care provided.