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## **Estimating the Cost of the Proposal to Reimburse Student Loan Payments by Young, Employed North Dakota Residents**

An initiative measure that recently qualified for the November ballot in North Dakota seeks to encourage young college and university graduates to remain in or return to the state to work. If approved by the voters, the measure would establish a state program allowing college and university graduates who both live and work in the state and are under the age of 30 to receive up to a \$1000 annual reimbursement of their student loan costs for a period of up to five years.<sup>1</sup> The measure would also provide a state income tax credit of up to \$1000 annually for a similar class of individuals.

Roger Johnson, Chairman of the North Dakota Youth Investment Initiative asked the Center on Budget and Policy Priorities to develop an estimate of the annual cost to the state of the student loan reimbursement portion of the measure (hereafter referred to as the “rebate” provision). This is a “static” estimate. A static cost estimate does not seek to factor in any effects on the state’s costs that result from changes in behavior that occur in response to economic incentives that may be created by the program. The proponents of the measure believe that income tax reductions and direct reimbursement of student loan payments could lead additional young people to remain in North Dakota after graduating from college there and/or return to North Dakota after attending college in other states, or, even, perhaps move to North Dakota for the first time after graduating from a university outside the state. To the extent that the financial incentives contained in the measure produced such results, there could be a partial offset to the direct costs of the rebates incurred by the state in the form of additional tax revenues flowing from additional employment. However, performing a complete “dynamic cost analysis” that factors in all potential economic effects of the measure is beyond the scope of this analysis. Such a study would have to incorporate many economic factors besides potential changes in North Dakota employment of recent university graduates, including, for example, how the net costs to the state of the rebates would be financed. The assumptions required would be too speculative to be valid. In sum, the following analysis is intended to be a technical, static cost estimate of the rebate portion of the measure. It should not be interpreted as endorsing the ballot measure or offering conclusions concerning its dynamic effects.

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<sup>1</sup> The loans could be incurred in connection with two- and four-year undergraduate programs as well as graduate degree programs in any accredited postsecondary institution in or out of North Dakota. Additional eligibility criteria are specified in the measure; most of them are discussed below.

**Table 1: Summary of Methodology**

Average number of new, likely eligible recipients graduating from NDUS institutions each year and still in ND and employed one year post-graduation (“Employed in North Dakota Only,” sum of under 20 and 20-29 age groups, Table 9, NDUS tracking studies, average for 1994-1999 graduates)	1983	
Previous number divided by .9 to account for NDUS estimate that its employed count reflects only 90% of those actually employed	÷ .9	2203
Estimated number of graduates of ND <i>private</i> post-secondary institutions (US Dept. of Ed. data for 1997-1999 graduates averaged)	801	
Estimate of new under-30 private school graduates employed in ND one year post-graduation (previous number times 33%, same ratio of potential eligibles to total graduates in NDUS institutions averaged for 1994-99)	x .33	+ 264
Total annual addition to pool (graduates of public plus private institutions)		2467
Times 5, number of years worth of previous eligible new graduates that will remain eligible for reimbursement in any given program year	x 5	12335
Adjustment for graduates lacking student loan debt (68% have such debt)	x .68	8388
Adjustment for graduates ineligible due to loan delinquency (90% not delinquent)	x .9	7549
Times \$1000 per eligible recipient per year	x \$1000	\$7,549,000
Equals: total estimated annual cost of rebate program		<b>\$7.5 million</b>

## Estimate

The Center estimates that the annual cost of providing the student loan rebates to all persons eligible for them would be approximately \$7.5 million.<sup>2</sup> The estimate is based on incomplete information and requires a number of significant assumptions. As will be discussed below, the assumptions seem reasonable and, in a number of key respects, conservative. Nonetheless, the use of different assumptions would affect the estimate. Table 1 is a summary

<sup>2</sup> This analysis does not include an evaluation of the likelihood that eligible individuals would fail to claim the rebate or that ineligible persons would claim it but not be identified by the state as being ineligible.

“walk-through” of the methodology leading to the estimate and should be referred to while reviewing the description of the methodology in the remainder of this paper.

## Methodology

For a number of years, the North Dakota University System (NDUS) has tracked the employment status of its graduates one year after graduation. The most recent such report looks at the 2000 employment status of 1999 graduates.<sup>3</sup> Table 9 of the report provides the key information underpinning the Center’s cost estimate for the rebate program. Table 9 shows that in 2000, some 1861 graduates of the state university system under the age of 30 were working in North Dakota – satisfying the three central criteria for eligibility for the rebate – degree completion, age under 30, and employment within the state.<sup>4</sup> The remaining 3721 graduates in this age group had either left the state, were unemployed, had re-enrolled in a state university, or had re-enrolled and were also working. (The relevance of the latter two groups to this analysis is discussed at the end of this discussion.)

### Correcting for Uncounted Workers

The employment status of graduates is determined by cross-checking social security numbers of graduates with social security numbers of North Dakota workers for whom unemployment taxes are currently being paid. The state acknowledges that this misses self-employed workers and estimates that its employment numbers represent only 90 percent of graduates actually employed.<sup>5</sup> Therefore, the state’s figure of 1861 employed, under-30 graduates from Table 9 is divided by .9 to obtain a revised estimate of the number actually employed, yielding 2068 persons. To take account of the possibility that 2000 was an atypical year for employment of North Dakota state university graduates, the comparable figures for the five previous years were taken from the previous NDUS reports, divided by the same .9 weighting factor, and averaged along with the 1999 figure. This yielded an estimate that in an average recent year, 2203 graduates of North Dakota state institutions under the age of 30 remain in North Dakota and are employed in the state one year after their graduations.

### Adding Private Institution Graduates

Graduates from private post-secondary institutions are also eligible for the rebate if they satisfy the other criteria. Thus, it is necessary to supplement the NDUS data with data on graduates of *private* North Dakota colleges and universities. Such data are collected by the U.S. Department of Education (USDE). For a recent three-year period for which the data were readily

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<sup>3</sup> North Dakota University System, *Creating a University System for the 21<sup>st</sup> Century: Follow-up Report on 2000 Placements of 1999 North Dakota University System Graduates*, June 2002. (Hereafter, “NDUS Report.”)

<sup>4</sup> It is possible that a small number of these individuals lived outside North Dakota, since the data look at location of employment rather than residence. For purposes of this estimate, it is assumed that all of these individuals also reside in North Dakota. Making the alternative assumption, that some reside outside North Dakota, would reduce the cost estimate, because people must live and work in North Dakota to be eligible for the rebate.

<sup>5</sup> NDUS Report, p. 3.

available, USDE reports that an average of 801 students graduated from private North Dakota post-secondary institutions.<sup>6</sup> USDE does not track the residency and employment status of these students after graduation. Accordingly, the Center's cost estimate assumes that graduates of private North Dakota institutions have the same age, residency, and employment profile as the NDUS graduates tracked by the state. The 2203 individuals under the age of 30 who were working one year after graduation represent 33 percent of the 6735 individuals graduating in an average year. Thus it is assumed that 33 percent of the 801 private graduates, or 264 persons, are also under 30 years of age, North Dakota residents, and employed in North Dakota one year after graduation.

### **Estimating the Total Potential Pool of Claimants from Annual Additions to the Pool**

To this point, we have estimated that in an average recent year, a total of 2467 individuals (2203 graduates of public North Dakota post-secondary institutions plus 264 graduates of private institutions) would satisfy the three key eligibility criteria for the rebate program – that they be degreed graduates, employed in the state, and under the age of 30 – one year following their graduation. We now make two other key assumptions.

We assume, first, that this estimate of 2467 eligible recent graduates based on academic years ending from 1994 through 1999 is representative as well of academic years ending in 2000, 2001, and 2002 (for which data are not yet available). If the measure is approved, loan payments made by eligible students after December 2002 will be eligible for reimbursement; many loans taken out by 2000, 2001, and 2002 graduates are likely to be reimbursed. (It is worth noting here that it is at least possible that a loan taken out as long ago as 1994 could be eligible for reimbursement in the first year the rebate program is in effect. For example, a 1994 graduate of a two-year community college who was 20 in 1994 would be 29 in 2003 when the program goes into effect and could have payments on an outstanding loan reimbursed.)

The second key assumption is that all of the 2467 individuals under the age of 30 who graduate in an average year and are employed in North Dakota one year after graduation will stay employed for at least five years while they are under 30, and so be eligible to receive the maximum \$1000 reimbursement in all of the five years for which it may be provided. In reality, this seems unlikely to be true for a number of reasons and so biases the cost estimate upward. First, and most importantly, it seems likely that many graduates who are working in the state one year after graduation will leave the state in subsequent years and therefore lose eligibility for the rebates. Table 9 of the NDUS report indicates that by 2000, close to half of the 1999 graduates might have left North Dakota.<sup>7</sup> If such a high proportion of graduates leave in the first year, it seems reasonable to assume that some will leave for good subsequently and so be ineligible to

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<sup>6</sup> National Center for Education Statistics, U.S. Department of Education, *Digest of Education Statistics*, various years. The number of graduates of private North Dakota institutions for the 1998-99 academic year is taken from Table 249, which actually reports degrees granted. It is assumed that each student receives one degree, although a small number of graduates likely receive multiple degrees.

<sup>7</sup> Even after adjusting for the undercount of employed persons discussed above, some of the “non-retained” graduates may still be in the state; they could be out of the labor force, unemployed, or re-enrolled in private North Dakota post-secondary institutions.

receive the maximum of five rebates. Second, many graduates will reach age 30 before the five years are up; according to an unpublished breakdown of the Table 9 statistics provided by NDUS to the Center, approximately one-fifth of the 1999 graduates in the 20-29 age group were 25 or older at graduation and so would be unlikely to receive all five possible rebates. Third, the measure provides that once the first rebate is received, the remaining four must be claimed in the subsequent four years. It seems possible that some proportion of the reimbursements will be forfeited by people who claim them for a few years and then become ineligible for the remainder because they have returned to school, dropped out of the labor force for personal reasons, or lost their jobs.

No hard data appear to be available that could permit a defensible estimate of the effects of these factors on the full five year eligibility of any particular individual. For that reason, and because other assumptions that arguably bias the estimate in a downward direction have also been made (these will be discussed shortly), we bias the estimate upward at this stage of the analysis by assuming that an individual who satisfies the eligibility criteria one year after graduation will eventually be able to claim all five \$1000 rebates available under the program.

If one assumed that, year in and year out, 2467 graduates under the age of 30 joined and remained in the North Dakota workforce (and that they all made student loan payments for at least five years), then by the fifth year of the program 2467 times 5, or 12335 people, would be receiving reimbursements. In the absence of any growth in graduates or any increase in the proportion of graduates taking jobs in North Dakota, this 12335 figure would be the maximum number of people receiving reimbursements in a particular year. (While 2467 new eligible graduates would enter the labor force in the sixth year, 2467 of the previous recipients would have exhausted their benefits.)

If the rebate program is approved, outstanding student loans of former graduates who remain employed in North Dakota will also be eligible for the reimbursement. As noted above, loans issued to people graduating from a two-year college as long ago as 1994 conceivably could be eligible for reimbursement in 2003. If one were willing to assume that every employed post-1994 graduate conceivably eligible could claim a rebate in 2003, it would be necessary to multiply 2467 times eight rather than five to estimate the number of rebates that would be issued in that year.

While it is possible that in the early years of the rebate program some relatively old loans will be eligible for reimbursement, the Center's \$7.6 million annual cost estimate is based on the estimate that the number of eligible recipients is the 12335 figure derived above.<sup>8</sup> In other words, we do assume that even in the first year of the program it is reasonable to estimate the total pool of eligibles by multiplying each year's average addition of new graduates to the pool by five rather than by a number between five and eight. The reasons for this choice were touched upon above — we have already made the assumption that all people that are eligible for the rebate one year after graduation will receive all five possible payments. Because this seems

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<sup>8</sup> This is the estimate before subtracting estimated numbers of both employed under-30 graduates who do not actually have outstanding student loans and employed graduates who are nonetheless ineligible for reimbursement because their loans are delinquent. These adjustments are made below.

particularly unlikely with respect to 1994-1997 era graduates — those most likely to have reached age 30 or to have left the state at a point beyond the one year post-graduation mark — it seems reasonable to choose a multiplier of 5 to estimate the total pool.

### **Adjusting for Graduates without Student Loan Debt**

Two additional adjustments must be made. First, not all otherwise-eligible graduates will actually have student loan debt. According to a recent U.S. Department of Education study, “62 percent of the graduating seniors at 4-year colleges and universities in 1999-2000 had borrowed. . . federal student loans by the time they had finished their university degrees” and an additional 3 percent had non-federal loans only.<sup>9</sup> A second USDE study found that 68 percent of those graduating from post-bachelors degree programs had borrowed from public and private sources at some point in their education.<sup>10</sup> We take the upper bound of the share of borrowers provided by the post-bachelors degree figure and assume that only 68 percent of the 12335 individuals potentially eligible for rebates actually have student loans that are being paid off. This reduces the estimate of recipients to 8388 persons (68 percent of 12335).

### **Adjusting for Ineligibility Due to Delinquent Repayment Status**

Finally, the ballot measure provides that students are only eligible for reimbursement of payments on non-delinquent student loans. The Bank of North Dakota, which issues a large number of student loans to North Dakota residents, estimates that at any point in time approximately 10 percent of its loans to such students are delinquent.<sup>11</sup> We assume this figure is representative of the delinquency rate of North Dakota student loan borrowers from all lenders. Assuming that 90 percent of the 8388 remaining individuals in the pool of eligibles are non-delinquent yields an estimate that 7549 persons would be eligible to receive the rebate annually. Multiplying this figure by the maximum rebate of \$1000 per person yields the Center’s final cost estimate of \$7.5 million.<sup>12</sup>

### **Data Are Unavailable to Adjust for Return of Eligible Graduates from Non-North Dakota Institutions**

The Center’s cost estimate is built on the key assumption that the potential eligible pool of reimbursement claimants flows from employed under-30 graduates of North Dakota public and private colleges and universities. It does not include in the pool an estimate of the number of

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<sup>9</sup> National Center for Education Statistics, *Student Financing of Undergraduate Education: 1999-2000*, July 2002, pp. 17 and 29.

<sup>10</sup> National Center for Education Statistics, *Student Financing of Graduate and First-Professional Education, 1999-2000*, July 2002, p. 103.

<sup>11</sup> Letter from Bank of North Dakota President Eric Hardmayer to John Walstad, North Dakota Legislative Council, dated May 9, 2002 (providing the Bank’s estimate of the cost of the rebate program).

<sup>12</sup> The USDE studies in cited in footnotes 9 and 10 indicate that bachelors and post-bachelors graduates took out an average of \$17,000 and \$39,000 in student loans, respectively. It therefore seems reasonable to assume that every eligible borrower will receive the maximum \$1000 annual reimbursement for the full five years.

North Dakota young people who leave the state to attend college and graduate school in other states but return to North Dakota to work after graduating. Neither does it include an estimate of the number of college and post-bachelors degree graduates under the age of 30 who move to North Dakota for the first time after graduating and would be eligible for the rebates as well.

It does not appear that reliable data are available to revise the estimate to account for these two categories of individuals. To put the significance of the first category in perspective, however, it is worth noting, first, that in the most recent year for which data are available (Fall, 1998), only 18 percent of North Dakota residents who entered college attended non-North Dakota institutions.<sup>13</sup> Second, an unpublished paper by USDE statistician Kristin Keough Perry estimates that while “Sixty-four percent of students who graduated from an out-of-state college [in 1993] had moved back to their original state of residence one year after graduation,” this had dropped to 52 percent by 1997.<sup>14</sup> These are national averages, and no state-specific or even regional breakdowns are available. It seems reasonable to assume that North Dakota would experience lower rates of return and long-term retention of students who left the state for college than the average state. Even if one were to assume that 52 percent of the 1226 North Dakota freshmen who started attending out-of-state colleges in the Fall of 1998 would return to the state (along with a comparable number of their peers matriculating in other years), adjustments would still have to be made for those who return to attend graduate school, would be unemployed, not have student loan debt, or have other disqualifying characteristics. In the absence of reliable data on these issues, we have declined to make any adjustment to the cost estimate to account for returning graduates. It should be noted again that focusing on recent graduates of North Dakota institutions does in fact capture the lion’s share of the likely pool of eligible rebate recipients from among previous North Dakota residents. Policymakers and citizens in North Dakota may be able to assess from their own personal experience how frequently North Dakota young people return to the state to work after graduating from out-of-state schools.

### **Data Are Unavailable to Adjust for New Immigration by Eligible Non-residents**

Nor are there reliable data to make an adjustment for people who move to North Dakota for the first time following college and university graduation, have reimbursable student loans, and would meet the other eligibility criteria. Internal Revenue Service data indicate that 8828 taxpayers (representing 16766 claimed personal exemptions) filed federal tax returns from North Dakota in 1999 after having filed their return as a resident of another state or foreign country in 1998.<sup>15</sup> Again, however, there is no available information concerning the age or employment status of these in-migrants, or indeed with respect to any of the other characteristics affecting their potential eligibility for the rebates. In the absence of reliable data, we decline to adjust the cost estimate to incorporate potentially eligible persons in this category. Again, we would argue

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<sup>13</sup> National Center for Education Statistics, *2001 Digest of Education Statistics*, Table 204.

<sup>14</sup> Kristin Keough Perry, *Where College Students Live after They Graduate*, unpublished paper dated June 11, 2001, p. 3. The study is based on the Department of Education’s “Baccalaureate and Beyond Longitudinal Study.”

<sup>15</sup> IRS Statistics of Income interstate migration data, unpublished. It is worth noting that between these two years there was a net out-migration from North Dakota of 3207 federal taxpayers, representing 6832 claimed personal exemptions.

that our assumption that any person who is eligible for the rebate one year after graduation will remain employed in North Dakota and under the age of 30 for the full five years so significantly biases the cost estimate upward that it is not unreasonable to make no adjustments for returning North Dakota residents or new in-migration of rebate-eligible persons.

### **Why Current North Dakota University System Enrollees Are Not Included in the Potential Claimant Pool**

One final methodological question may arise that it seems advisable to anticipate and answer. In addition to graduates who are employed in North Dakota, Table 9 of the NDUS study reports on two additional categories of NDUS graduates who remain residents of the state one year post-graduation. One category consists of individuals who have re-enrolled in NDUS institutions, and the other consists of persons who have both re-enrolled and are working. A question may arise as to why under-30 individuals in these two categories were not also counted as people likely to remain in the state long-term and eventually claim the rebates. Indeed, it might be asserted that the second category would be likely to claim the rebate as soon as it is available, while they are still enrolled in their second NDUS institution.

With respect to this latter argument, we have assumed that people who are re-enrolled in NDUS institutions, even if they are working, are not currently paying off student loans but rather are deferring payment until they have graduated (as federal student loan rules permit). The program is a reimbursement of actual borrower repayments, not a repayment of outstanding principal; if no repayments are occurring, no reimbursement occurs. The answer to the first, broader question, is that many of the persons in these two categories are, in fact, effectively captured in the pool. If they graduate from the second program and are at work in North Dakota one year following graduation, they will be counted in the estimated annual addition to the pool represented by the “Employed in North Dakota Only” column of Table 9 in that year.

### **The Bank of North Dakota’s Cost Estimate**

The Bank of North Dakota has prepared its own estimate of the annual cost of the rebate program, \$24.3 million (exclusive of administrative costs).<sup>16</sup> The Bank’s methodology starts by taking its own pool of what it believes to be North Dakota-resident borrowers currently repaying loans. It then weights this figure up based on rough estimates of the share of all outstanding student loans to North Dakota residents that it believes its own loans represent. Finally, the Bank then cuts this number by 10 percent to account for ineligibility due to loan delinquency and multiplies the resulting figure by the \$1000 rebate per person per year.

This methodology potentially suffers from several significant flaws. Most importantly, it does not take into account the possibility that many of its current borrowers could be over thirty or not employed and therefore not eligible to claim the rebate. (Note that a 28 year old graduate of a post-bachelors program could easily be repaying loans well into his/her thirties.) Second, the Bank has provided no verifiable documentation of its estimate of its share of the North Dakota student loan market. Finally, the Bank assumes that any student loan billing statement

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<sup>16</sup> See footnote 11.



mailed to a borrower at a North Dakota address represents a resident of the state. This seems like a questionable assumption; many young people move frequently and use their parents' addresses as their mailing address — particularly for critical mail like student loan bills. (In addition, some parents of non-resident graduates may be receiving their children's student loan bills because the parents are actually repaying them.)

Because the Bank's borrower data do not include information about — and may not correlate closely with — most of the critical eligibility criteria for the rebate program, it seems preferable to use the type of “bottom-up” analysis underlying the Center's cost estimate. The North Dakota University System's tracking data provide a solid foundation for this analysis because they permit a ready identification of degreed graduates under the age of 30 who are employed in North Dakota — the three most important eligibility criteria for the program.