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HB19-1005 Income Tax Credit For Early Childhood Educators
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Overview

HB-19-1005 seeks to provide an income tax credit for eligible early childhood educators. Eligibility requires that educators hold an Early Childhood Professional Credential, as issued by the Colorado Department of Education. Additionally, for at least six months of the taxable year, the educator must either be the head of a family child care home or be employed with an eligible program or home. Eligibility is further defined in the body of the bill, referencing other sections of the Colorado Revised Statutes. As a safeguard, the bill specifies that an eligible program must meet certain state and federal regulatory standards.

The amount of the credit depends on the educator's credential type, but ranges between $1,000 and $2,000 for income tax years beginning on or after January 1st, 2019. For income tax years beginning after January 1st, 2020, these values are adjusted by the Colorado Department of Revenue to reflect inflation.

The primary motivator behind this bill is early education's benefit to society, or its positive externality. As the bill posits, "the benefits of quality child care and early education are well documented and a striking connection exists between children's learning experiences well before kindergarten and their later school success." If we believe this to be true, and believe that school success can benefit society more widely, then it is within the government's interest to bolster these positive externalities.

Analysis

In the broadest sense, early childhood education has been shown to benefit students in areas ranging from school success, to emotional stability, to overall lifetime earnings (Schweinhart

2013). More specifically, early education benefits student engagement in core academic functions. For example, Cambell et. al. (2019) found that interactive book reading quality was both positively and significantly related to children's development of both language and literacy skills, dependent on classroom organization. This finding has been supported by a number of other papers as well, both in the U.S. and internationally (Rao et. al. 2012, Melhuish 2013, Cooper et. al. 2014, Cetin et. al. 2018). Additionally, certain of forms early education have been linked to increased performance in numeracy (Aunio and Mononen 2018) and later on in math (Aunola et. al. 2004).

With this said, these benefits accrue only to enrolled students. In public economics, the government should intervene only when the goods or services offered have an additional impact on society. These impacts are called externalities. In the situation of a positive externality, the benefits of the goods and services, essential in defining the market quantity supplied, are underestimated.

Underestimation occurs because only the benefits provided to the individual are considered. With respect to education, these are the benefits described in the earlier paragraph. These are also the benefits for which the consumer directly pays.

Yet, there are circumstances in which goods or services provide a benefit that accrues to society as a whole. Because these benefits are less defined in the market, they are not incorporated into price. Furthermore, they cannot be priced-in by markets alone, as consumers, seeing only their private benefit, are unwilling to pay the socially optimal price. Thus, in a social context, these goods and services are underproduced. To boost production, the government must subsidize them. A graphical representation of this situation is shown in Figure 1 of the Appendix.

The question therefore becomes whether early childhood education produces a positive externality for society and whether current production is sub-optimal. In the situation that positive externalities do not exist, this bill would be unnecessary. Wages are set by the market. If wages become too low for workers, they will naturally transition to higher paying or more stable industries. This will temporarily diminish supply for educators, but, if the industry is essential enough, then a sustained demand curve will put an upward pressure on wages. This could either produce a new equilibrium or bring workers back into the market. Either way the outcomes are pecuniary.

Yet, as Harbach (2015) argues, positive externalities occur both socially and fiscally in the child care market. Although there is a time lag, a child's early education ultimately provides societal payoffs through cost savings in education, crime prevention, and reduced usage of social services and public assistance. Cost reductions appear in various forms, including decreases in unemployment, criminalistic behavior, teen pregnancy, and welfare usage, as well as increased general health. Additional short-term benefits appear through local employment and increased economic activity in the child care sector. Aslaksen et. al. (2000) provide a similar argument.

Additionally, Casarico et. al. (2015) provide a model to describe the optimal tax and daycare quality levels under multiple public policy scenarios. One aspect of their model is that subsidies and daycare quality are both set by the government. Additionally, skills transfer, which they suggest produces a positive societal externality through productivity, depends on daycare quality.

In the model's optimal outcome, the daycare quality variable takes on its highest possible value (i.e. the government actor chooses to establish daycares with the highest possible quality).

Additionally, the subsidy variable is higher than under an alternate scenario in which daycare quality is fixed. (In both scenarios subsidies remain positive). These results offer evidence for the justification of HB-19-1005.

Finally, for the Brookings Institute, Sawhill et. al. (2006) provide a model that analyzes the impact of a high-quality universal preschool policy on economic growth. Their results show that such a policy could add $2 trillion to annual U.S. GDP by 2080. Additionally, while the national program shows an estimated cost of $59 billion by 2080, it generates enough additional growth in federal revenue to cover the costs multiple times over.

The societal benefits proposed in the literature above are less tangible than literacy and academic success. They are non-pecuniary and therefore not incorporated into early educators' earnings. Instead educators' job are viewed as low-skill and not highly technical, thus displaying a lower associated value. An inefficiency arises in that the marginal benefit of early childhood education is being underestimated.

HB-19-1005 seeks to mitigate such an inefficiency by subsidizing early educators, thus increasing their income. Tax credits grow progressively for higher credentials. This will encourage the acquisition of higher levels of training, which will, in turn, raise the overall *standard* of our early education system.

Existing child care policy already recognizes the need for subsidies to encourage positive educational externalities. For example, the Colorado Child Care Assistance Program helps families based on earned income. Additionally, the Colorado Preschool Program provides greater access to early education for over 20,000 disadvantaged children showing risk factors for challenges later in school. Moreover, Head Start and Early Head Start provide a wide array of

no-cost programs and services for low-income children and their families, often establishing community partnerships as well as developing their own facilities.

Yet, existing programs do not fully provision for the positive externalities of early education. According to Excel files published by the Colorado Department of Education, truancy rates for certain preschools exceed 10% in counties such as Adams, Cherry Creek, and Pueblo City (Attendance and Truancy Rates by School 2017-18). This suggests that there is still room for improvement in how we encourage the socially optimal level of early education.

What differentiates HB-19-1005 from these programs is that this bill seeks to raise the overall education and skill set of early educators, rather than subsidize access to education. Thus, while other programs seek to increase the utilization of early education, HB-19-1005 seeks to raise its quality. In other words, HB-19-1005 works from the supply side of early education rather than the demand side. HB-19-1005 is differentiated enough in its goal that existing programs do not supercede it.

Recommendations

The General Assembly wishes to grow Colorado's supply of highly credentialed early childhood educators. HB-19-1005 will encourage both a growth in the educator labor force, as the cost of work is subsidized, and an increase in credential levels, as higher credentials are progressively discounted. Given the positive externalities of early education, Colorado stands to see a substantial benefit from this policy. The current market equilibrium underproduces quality child care because its wider social benefits are not incorporated into its market value. HB-19-1005 will work to remedy this inefficiency, and therefore I recommend the General Assembly pass this bill.

Appendix

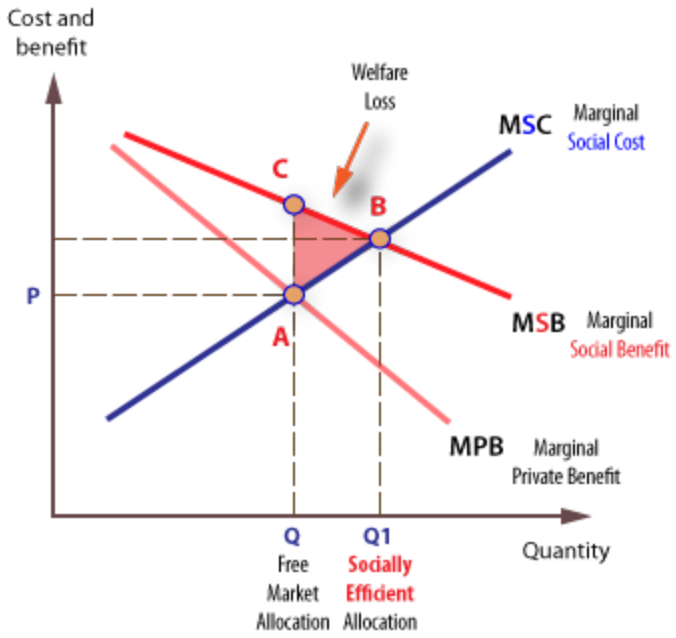

Figure 1 - A graphical representation of a positive externality

Source: Positive Externalities. (2019). Retrieved February 11, 2019, from https://www.economicsonline.co.uk/Market_failures/Positive_externalities.html

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