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How Arizona's Dropout Crisis Affects Communities, Creates Economic Losses for the State of Arizona

A Project of WestEd

Arizona Mayors Education Roundtable

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SUMMARY

One-in-five of Arizona's youth did not complete high school and a similarly large proportion of the state's youth is disconnected from either work or education. These youth face higher risks of unemployment and economic insecurity and are more reliant on government supports. Thus, failing to ensure that the state's youth are adequately prepared for adulthood creates both social and fiscal losses.

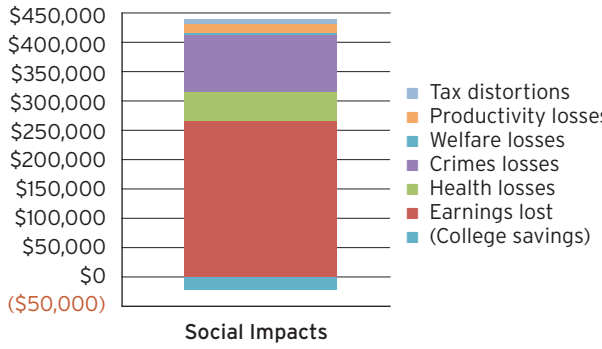
In this report we calculate the social and fiscal losses for high school dropouts and disconnected youth (those not in work or school/college). The social loss reflects lost earnings, higher criminal activity, poorer health status, higher reliance on government programs, as well as productivity losses and tax distortions. The fiscal loss reflects lost taxes and increased government spending on crime, health, and welfare; this loss is split between the federal government and Arizona state/local governments. The losses are estimated for the state of Arizona and for selected localities within Arizona.

We use an economic model based on national research evidence and Arizona-specific data to calculate these losses. The model creates lifetime economic profiles for dropouts in comparison to high school graduates and for disconnected youth in comparison to other youth. These profiles are expressed as present values at age 18 (dropouts) and age 20 (disconnected youth) in 2013 dollars and adjusted for the price level in Arizona.

High School Dropouts

For each high school dropout, the lifetime social loss for the state of Arizona is $421,280. Across the 18,100 students in Arizona who dropout of high school annually, this social loss amounts to $7.6 billion. Figure 1 shows the breakdown of social losses to the state of Arizona for each high school dropout.

Figure 1. Social Losses for Arizona per High School Dropout

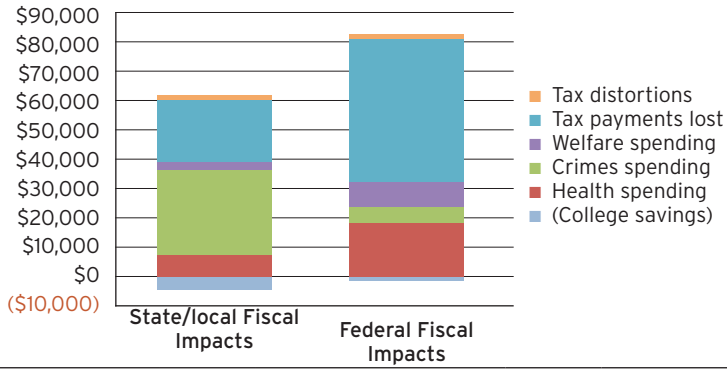


Social Loss per High School Dropout over Lifetime $421,280	x	High School Dropouts in Each Year Group 18,100	=	Aggregate Social Loss for Arizona Annually = $7.6 billion

For each high school dropout, the lifetime fiscal loss to the state/local governments of Arizona is $54,350. Across a cohort of dropouts, this loss is $1.0 billion. In addition, the lifetime fiscal loss to the federal government is $81,380 and the cohort loss is $1.5 billion. As federal government spending within Arizona matches the payments made by Arizona residents into the federal government (and because of maintenance-of-effort agreements between federal and state governments), the federal fiscal loss should be added to the state/local fiscal loss. Overall, the lifetime fiscal loss per dropout for Arizona is $135,730 and the loss across an entire cohort is $2.5 billion.

Figure 2 shows the breakdown of fiscal losses to the Arizona taxpayer for each high school dropout.

Figure 2. Loss to Taxpayers per Arizona High School Dropout



Fiscal Loss per High School Dropout over Lifetime $135,730	x	High School Dropouts in Each Year Group 18,100	=	Aggregate Loss for Arizona Taxpayers Annually = $2.5 billion

Disconnected Youth

For disconnected youth, there are both immediate losses and future losses caused by the absence of human capital and work experience. The social loss is $155,470 across the youth years aged 16-24 and then an additional $539,620 during adulthood after age 24. In total, the lifetime social loss per disconnected youth is $695,090.

Social Loss of Each 20-Year Old Disconnected Youth in Arizona

Across the 183,200 youth in Arizona who are disconnected youth, the aggregate social loss is therefore $127.3 billion.

Social Loss per Disconnected Youth over Lifetime $695,090	x	Disconnected Youth (ages 16-24) in Arizona 183,200	=	Aggregate Social Loss for Arizona = $127.3 billion

The fiscal loss from disconnected youth in Arizona is also substantial. Accounting for both the loss in youth and adulthood and the federal and state/local losses, the fiscal loss is $234,480 per disconnected youth and $43.0 billion across each cohort of youth.

Fiscal Loss of Each 20-Year Old Disconnected Youth in Arizona

Across the cohort of 183,200 disconnected youth in Arizona the total fiscal loss is $43.0 billion.

Fiscal Loss per Disconnected Youth over Lifetime $234,480	x	Disconnected Youth (ages 16-24) in Arizona 183,200	=	Aggregate Loss for Arizona Taxpayers Annually = $43 billion

1. INTRODUCTION

Across the nation's youth, approximately one-in-five is a high school dropout and one-in-six is disconnected from either work, school, or college (so-called 'disconnected' or 'opportunity' youth). These two groups overlap and share many similar life and economic circumstances. Few of them have much labor market experience and even fewer are economically independent; and only a minority will accumulate any additional human capital during adulthood. Disproportionately, these youth will be involved in criminal activities, rely on public health programs, and receive welfare supports. Given these early circumstances, such youth face substantially diminished prospects over their lifetimes; and these lost opportunities represent a large social and fiscal loss.

This pattern is found nationally. But the immediate loss – from high rates of school failure, a weak labor force, and higher government spending on 'bads' – is faced by state and local governments and by local communities within states. Working with state agencies, local government and community groups must respond first and devise regulations, programs, and policies to ameliorate these disadvantages. In the first instance, however, these agencies need to know the full extent of the economic loss from failing to ensure that all youth have opportunities to be productive citizens.

In this Report we calculate the social and fiscal loss from high school failure and disconnected youth for Arizona and for selected communities within the state. The economic impacts are felt by the youth themselves, by taxpayers and across all society. There are immediate losses during youth and there are long-term losses as these youth fail to prosper. These losses can be calculated from various perspectives: for the taxpayer and for society; by youth subgroups; by level of government; and for individual communities. Here we focus on the fiscal (taxpayer) losses and the social loss across Arizona.

First, we outline the economic framework used to model these losses (with details in Appendix A). We then report the calculations and the datasets used to derive each value for the model. We then derive the economic losses from the fiscal and social perspectives for the state of Arizona for both dropouts and disconnected youth; we also calculate the losses for ten communities across the state. Finally, we consider the policy implications of having large proportions of youth who have neither completed high school or become involved in the labor market.

2. HIGH SCHOOL DROPOUTS AND DISCONNECTED YOUTH

The context for analysis of youth prospects is shown in Table 1. Nationally, there are 38.9 million youth aged 16-24; and each school year, there are 4.3 million students who should be graduating from high school. However, between one-fifth and one-quarter of these students do not graduate from high school and this rate has been stable over recent decades (Murnane, 2013). Using the most recent NCES estimates, this amounts to 0.9 million 18-year-olds each year who are leaving their compulsory schooling years without having obtained a high school credential. This is one way to measure the economic loss from poor investment in youth – the failure to complete high school.

Table 1
Dropouts and Disconnected Youth in the US and Arizona

	Youth	Percent of Age Group
Nationally:		
Youth population (ages 16-24) [a]	38,943,000	
High school 'class' (cohort of 18-year-olds) [a]	4,335,000	
High school dropouts (cohort of 18-year-olds) [b]	943,300	21.8%
Disconnected Youth (ages 16-24) [c]	6,737,100	17.3%
Arizona:		
Youth population (ages 16-24) [d]	825,300	
High school 'class' (cohort of 18-year-olds) [a]	90,700	
High school dropouts (cohort of 18-year-olds) [b]	18,100	20.0%
Disconnected Youth (ages 16-24) [e]	183,200	22.2%

Sources: [a] Puzzanchera et al. (2010). [b] NCES Digest (2013, Table 124). [c] Belfield et al. (2012, Tables 1 and 2). [d] Census ACS 2012. [e] Calculations from Census ACS 2012. *Notes*: Figures exclude GEDs. Rounded to 100.

An alternative way to estimate the loss from unprepared youth is to count how many disconnected or opportunity youth there are. Disconnected youth are those persons aged between 16 and 24 who are neither in work nor in school or college. It includes youth in many different circumstances.[1] Most youth are in school until 18; three-fifths of these graduates then go straight to college and one-quarter of them are working or looking for work. But many – the majority of youth – don't follow a straight and direct path through early adulthood. Many high school graduates fail to graduate on schedule and many college students are only enrolled part-time or intermittently; for those in the labor market, between one-in-ten and one-in-five will be unemployed. Thus, having large numbers of high school dropouts is not the only (or guaranteed) way in which the nation's youth is not being fully realized.[2] Based on calculations by Belfield et al. (2012), a national estimate of disconnected youth is 17%, which represents over 6.7 million youth (Burds-Sharp (2014) estimate 5.8 million. Recently, Burd-Sharps and Lewis (2014) estimate 5.8 million disconnected youth. Compared to the several cross-section and longitudinal

datasets in Belfield et al. (2012) their estimate uses a single dataset (ACS) and a slightly earlier version (2010 versus 2012). Burd-Sharp and Lewis (2014) also use a slightly narrower definition of disconnected youth.

For Arizona, the pattern is similar but in all likelihood is even more stark. The youth population is 825,300 persons and each cohort of 18-year-olds is 90,700 individuals. On most measures of high school completion, the rate for Arizona is slightly below that nationally. Each year 24% of students are not high school graduates using a four-year graduation rate. However, some of these students graduate late and so a better measure is the five-year graduation rate which is 20% or 18,100 youth.[3] Looking at the state's youth, over one-fifth (22%) are classed as disconnected youth: this amounts to 183,200 youth across the state.[4]

Dropouts and disconnected youth are not a uniform group. Some face multiple disadvantages; others have actively chosen alternatives to education or employment (such as child-rearing). Youth crime rates are extremely high: over their youth years, 18% of disconnected youth will have been arrested. Poverty levels, substance abuse, depression, and disability rates are also significant risk factors during the youth years (Myers and Farrell, 2008; Fletcher, 2012). But these risks - crime poor health, and economic insecurity – interact with each other. Few exits are available, with most youth ineligible for, or unable to afford, college or adult training programs.

Clearly, these youth face many 'risk factors'. Over the past decade, some of these have worsened and others have improved. Critically, however, it is risk factors that are outside the control of youth that have worsened. Youth behavior has not worsened, but the context in which that behavior takes place has (Belfield and Levin, 2012, Table 2). Specifically, low-skilled youth now face a much more deteriorated labor market. The real earnings for high school dropouts – the labor market most disconnected youth are in – are almost 10% lower now than at the start of the decade. High school graduate wages have also flat lined. This is in the context of a rising price of college – thus the cost to disconnected youth of accumulating skills is much higher. An overall indicator of circumstances facing youth is the poverty rate, which has risen from one-fifth to over one-quarter in the last decade.

Although the pattern of high school failure and youth disconnection is common across the country, there are varied impacts across states and localities. The economic consequences of school failure may differ between Arizona and the rest of the nation and they may differ across localities within Arizona. Besides demography, areas vary in: the strength and structure of their youth labor markets; their public support for education; their tax systems; and their ability to access federal support programs. Typically, dropout rates are highest in urban areas because school quality is lower and household poverty rates are higher. Disconnected youth rates may also vary with population density, although urban areas may offer more employment opportunities for youth, albeit in low-level jobs, as well as greater accessibility to post-secondary education. Thus, even as localities across Arizona face the same state (and federal) legislation, they may still have different economic losses.

3. ECONOMIC FRAMEWORK TO CALCULATE LOSSES

The economic framework to calculate the fiscal and social losses of unprepared youth is well-established. The model has been applied at national, state, and local levels, as well as for subgroups of youth at different education levels. (For example, studies include: Belfield and Levin (2007); Trostel (2009); Sum et al. (2009); Baum et al. (2010); Gottlob (2007); Carroll and Erkut (2009); Belfield and Levin (2009); Bush School of Government and Public Service (2009); and EMSI (2014)). Estimates for disconnected youth have also been calculated in the same way.[5] As yet, the model has not been applied for Arizona.

Basically, the model operates by comparing lifetime profiles. For the dropout analysis, profiles are created for different educational attainment at the high school level, which in turn yield differences in postsecondary attainment and so adult earnings. Similarly, for the disconnected youth analysis, profiles are created for different youth education and employment status; these in turn lead to different youth and adult outcomes. Given different lifetime profiles of education and employment across dropouts and disconnected youth compared to other youth, it is then possible to calculate the losses. Dropouts and disconnected youth with low skills face worse economic, social, and personal outcomes, both immediately and over a lifetime. These outcomes can be calculated as economic losses to society and to taxpayers. As dropouts and disconnected youth are compared to different groups, their losses are calculated differently. So, looking at an 18-year old it is possible to predict their total lifetime earnings if they are a dropout; and it is possible to predict their total lifetime earnings if they are a graduate. The difference is the total gain in earnings from graduating from high school. Of course, dropouts and graduates differ in many respects and so the difference is adjusted to account for these differences. A similar process is applied for health, crime, and welfare status. This lifetime difference approach is used in all of the studies listed above.

Students who fail to complete high school by age 18 are classed as dropouts. The comparison group for these dropouts is the group of high school graduates adjusting for their probability of going to college. By assumption, high school graduates are assumed to follow the typical path of a low-income high school graduate, i.e. one-third progress on to college and one-sixth complete a bachelor's degree. Thus, the results are based on a thought-experiment where at age 18 a dropout 'switches' to being a high school graduate and then progresses through the average lifetime profile of a high school graduate. The economic consequences of this switch are then calculated as a present value at age 18 for each individual student and in aggregate for an age cohort of students in high school.

The comparison group for disconnected youth includes all other youth, i.e. those who are working or in school or college (with adjustments made for differences in educational attainment). Unlike being a dropout, which can be thought of as a status, being a disconnected youth is an event, i.e. each year it is possible to change category (if for example the youth gets a full-time job or enrolls in college). Thus, the loss from disconnected youth is measured in two parts. One part of the loss is the annual amount associated with being a disconnected youth in any year up to age 24. The other part is the subsequent lifetime loss (after age 24) associated with being

a disconnected youth for at least half of the entire youth years. Given that the youth group is spread over persons aged 16-24, these losses accumulate. Thus, the results of the model are based on a thought-experiment where at age 20 a disconnected youth 'switches' out of this category for the rest of their youth years.[6] The economic consequences of this switch are calculated as a present value at age 20 for each youth and in aggregate across all youth.

Depending on the lifetime profiles of the two groups and their comparison groups, there are private, fiscal, and social consequences. These consequences include changes in earnings and productivity, as well as other changes which are then translated into money terms. For this analysis, the focus is on the fiscal consequences separately for state/local government, as well the aggregate social consequences both across the state and within communities.[7] The social perspective counts all of the resource implications of disconnected youth, while the fiscal perspective only counts resources for which the taxpayer is responsible. The main fiscal consequence is lost earnings and so lost tax revenues, but there is also increased spending on youth who either have inferior health status, have greater criminal involvement, or rely more heavily on social services. The social perspective includes all these consequences, but accounts for their entire effects (not just their effects on government revenues and expenditures).

The economic values in the model are individual and aggregate present values of losses associated with being a high school dropout or disconnected youth. All economic calculations rely on the most recent social science evidence disaggregated by sex and race (white, black, Hispanic, and other racial groups according to the composition of youth in Arizona). Where available, educational and labor market data for Arizona is used; expenditure data is taken from Arizona state government departments. For analysis for selected areas in Arizona, local data is used where available based on Census PUMAs (Public Use Microdata Areas, which are non-overlapping areas of approximately 100,000 residents), school district information, and local government departments.

All money amounts are expressed in present values at age 18 or age 20 using a discount rate of 3.5% (Moore et al., 2013). All figures are in 2013 dollars, weighted to the price level in Arizona. The dollar amounts generated by the model represent lump sum values when a student is aged 18 or aged 20. These values can therefore be considered equivalent to a bank deposit made at that date.

Across cohorts of high school dropouts there are a number of studies that have calculated the fiscal and social losses (see note 3 above). The studies vary somewhat in assumptions and model parameters. Expressed in 2013 dollars and in present values at age 20, an overall estimate is of fiscal losses of $0.2 million and a social loss in excess of $0.5 million. National estimates for disconnected youth and subgroups of such youth are also available (Belfield et al., 2012; Belfield and Levin, 2013). In 2013 dollars and in present values at age 20, the national estimate is of a taxpayer loss at $14,900 per year during the youth period and an additional $182,700 expressed as a lump sum loss after the youth becomes 25. The national social loss is even greater, at $40,100 per year in youth and $566,100 as a lump sum from age 25. These estimates provide a benchmark for comparison across Arizona.

4. CALCULATIONS OF THE SOCIAL AND FISCAL LOSS FOR ARIZONA

4.1 Earnings and Tax Consequences

Youth who are in school and college earn significantly more than dropouts and disconnected youth; and these differences grow even larger over time when the former group is fully participating in the labor market equipped with more skills. These gaps in skills and work experience have a persistent effect on employment prospects and so on earnings. Differences in earnings and labor force productivity then translate into differences in tax payments.

High school dropouts have much lower incomes than graduates, even accounting for differences in student ability and motivation (Altonji et al., 2012). Higher incomes leads to higher tax payments. To calculate the net effect of high school graduation, lifetime earnings and tax payment profiles are created for four pathways: high school dropouts, high school graduates, persons with some college, and those with a four-year degree. The last three pathways are then combined to create the pathway for a high school graduate with the potential to attend college (adjusted for rates of college enrollment and completion in Arizona). The pathways can then be compared in terms of the differences in lifetime earnings and tax payments.

Earnings data are taken from the Arizona sample of the merged March Supplements of the Current Population Survey (CPS) for the years 2009 through 2013. As a validity check, data is used on the Arizona respondents from the Public Use Micro Sample of the American Community Survey (ACS) for the five year period 2006-2010. The CPS is intended to identify earnings with the most precision, but the ACS has the advantage of much larger samples (to allow for subgroup analysis within a single state).

Earnings profiles reflect gross earnings plus health benefits, adjusted for state labor force participation rates, national productivity growth, and ability/motivation. Also, the profiles of those groups with more education are adjusted for ability/motivation. For each dataset earnings are collapsed into education levels and five-year age bands. From these age bands each lifetime full earnings profile is extrapolated to age 65 and then discounted back to a present value at age 18.

Using these methods, high school dropouts are predicted to earn $233,260. By contrast, high school graduates (adjusting for college enrollment rates) are predicted to earn $504,300 (net of ability/motivation). Relative to a dropout across Arizona, this amounts to a gain of $271,040 at age 18. (Similar gaps are found by Oreopoulos and Petronijevic, 2013).

Tax payments are modeled separately by level of government. Federal incomes taxes are calculated using three approaches. One uses declared after-tax federal income tax payments of respondents to the CPS (also adjusted for labor force participation, productivity growth, and ability). The second uses gross earnings data (derived as above from the CPS and ACS) and applies the NBER TAXSIM calculator. The final approach assumes federal income taxes are a flat proportion of gross earnings based on simple marginal tax rates.

State/local tax payments are calculated in a similar way. Arizona's state income tax has a top rate of 4.5%; but the state relies mostly on its state sales tax of 6.5%; property taxes are levied at the county level. By source, tax collection is 62% from sales taxes, 24% from state income tax, 6% from property tax, and 8% from other sources (see Appendix Table 2).[8] These state taxes are calculated from CPS data on after-tax state tax payments and property tax payments. Also, state sales taxes are calculated as a proportion of gross earnings (from CPS and ACS data) based on current state and county-level sales tax rates (adjusted for exemptions). These two estimates are then averaged to create lifetime state/local tax profiles.

The gaps in tax contributions are also large. Tax payments increase significantly with education. At the state-level, a high school dropout will pay in $28,890 and a high school graduate $52,110; the net effect is tax payments that are $23,200 higher than those of dropouts. Arizona residents who are graduates also pay more in federal incomes taxes. The present value lifetime profiles of federal income taxes are $25,750 per dropout and $74,110 per graduate; the net effect is an additional payment of $48,360.

A parallel approach is applied for disconnected youth in Arizona. As with dropouts, few disconnected youth have jobs, and if they do, their work is often intermittent or in low-wage and temporary jobs with few benefits. Thus, there is an initial loss from disconnected youth, but there is also a lifetime loss as earnings trajectories diverge with skills levels. Using ACS data on 10,051 youth in Arizona, the average disconnected youth earns $6,870 per year, while other youth – most of whom are either in school or college at the same time - earn an average of $8,900 per year. Thus, even in the early years the earnings penalty across disconnected youth is substantial. In addition, lifetime earnings based can be projected forward (as per the framework for dropouts) and this creates a sizeable lifetime loss in terms of lost earnings per disconnected youth. From a Mincerian function of earnings after age 24, the gap in earnings is very large: disconnected youth earnings are less than 35% of other youth. Finally, as for dropouts, this earnings gap for disconnected youth also translates into lost tax contributions at both the state and federal level.

4.2 Other Losses

There are many other losses associated with low human capital. (See Appendix Table 2 for government spending in Arizona on crime, health and welfare). Those economic consequences can also be calculated over the lifecycle.

One salient loss is increased criminal activity. The association between dropping out of school and crime is well-established (Lochner and Moretti, 2004; Lochner, 2011). Similarly, disconnected youth have higher crime rates (notably drug use and gun violence); over one-third of all such youth have had some involvement in the criminal justice system and this leads to further crime in adulthood. More than one-third of all violent crimes and almost half of all property crimes are committed by youth. (Using NLSY97 data, Belfield et al. (2012) estimate that 63 percent of youth crime is attributable to disconnected youth, which accords with previous estimates

of the relationship between crime, disadvantage, and poor education (Lochner and Moretti, 2004). From a fiscal perspective, taxpayers incur expenditures for the criminal justice system, for corrections, and for other crime prevention agencies. However, high-crime communities face a greater loss, as the costs to victims are much larger than government expenditures (Sickmund et al., 2011).

An additional loss is created by lower health status of dropouts and disconnected youth. The link between low education and poor health is strong, across a range of health conditions and health behaviors (Cutler and Lleras-Muney, 2011). Disconnected youth also have lower health status, have spent more time institutionalized or hospitalized, and are less likely to have health insurance.[9] Nationally, such youth draw upon Medicaid at a rate six times that of other youth. The fiscal consequence is higher spending on public health care (Medicare, Medicaid, CHIP, and state programs). The social consequence is the loss on the youth themselves from being in poor health. Although these health insults are mostly latent in youth, they quickly grow in adulthood (Walsemann et al., 2008; Adler and Stewart, 2010; Cylus et al., 2010). Lower health status can be monetized using QALYs.[10]

Dropouts and disconnected youth are more likely to receive welfare payments. These include TANF, housing assistance, food stamps and WIC grants (Grogger, 2004; Waldfogel et al., 2007). In addition, these youth are more likely to be enrolled in youth programs (such as Job Corps). Within Arizona, for example, over 35% of all adult TANF receipts were high school dropouts (DHHS, 2012, Table 10:25). Using ACS data, disconnected youth on average receive $130 in public assistance; by comparison, other youth receive only $8.

Two additional losses are included. One is from labor productivity externalities in that more educated workers are more productive when working with other skilled workers (Monaco and Yamarik, 2013). Studies have found that, as the proportion of college graduates in the population increases, so do average earnings and Gross State Product (Moretti, 2004; Iranzo and Peri, 2009; Abel et al., 2010). Therefore, labor productivity externalities are lost when the workforce is low-skilled. Another loss is that associated with collecting taxes to pay for government programs. This 'marginal excess tax loss' (METB) is applied for all fiscal impacts, adjusted across federal and state/local impacts according to the tax incidence.

A final consideration is the educational expenditure 'saved' by having fewer students in school and college. Obviously, dropouts have less schooling; but so do disconnected youth (with only 1% having a four-year degree). These savings should be included in the loss calculations. College costs – tuition and government subsidies – are calculated separately for two-year colleges, four-year public colleges, and four-year private colleges in Arizona. The costs are then apportioned based on students' enrollment patterns respectively in each sector and based on whether the subsidies are from federal or state/local agencies.

5. THE FISCAL AND SOCIAL LOSSES FOR ARIZONA

5.1 Losses from Failure to Complete High School

Tables 2 and 3 show the potential value of high school dropouts for the state of Arizona. (Details on sources are given in the Tables Notes). These valuations are derived from the method described above and research evidence on economic patterns in Arizona.

Table 2

The Social Loss across High School Dropouts in Arizona

	Total Social Losses per High School Dropout (18-year-old)	Aggregate Social Burden per Age Cohort ($ millions)
College [a]	$(21,980)	$(398)
Earnings [b]	$271,040	$4,906
Health [c]	$48,000	$869
Crime [d]	$98,520	$1,783
Welfare [e]	$1,420	$26
Productivity [f]	$16,260	$294
METB [g]	$8,020	$145
Total Burden compared to HS Graduate	**$421,280**	**$7,625**

Sources: [a] CPS data 2009-2013; ACS data 2006-2010. [b] Arizona tax code; NBER TAXSIM9; www.taxfoundation.org, www.taxadmin.org. [c] Medical Expenditure Panel Survey; Kaiser Foundation; Schoeni et al. (2011). [d] Fiscal and victim costs (Cohen and Piquero. 2009; DeLisi et al., 2009 Miller et al., 1996). [e] ACS (Tables ACSBR/09-13, ACSBR/09-8); DHHS (Table_b1_2009.htm, 2012, 10:25). [f] Abel et al. (2010). [g] Allgood and Snow (1998). *Notes:* Present values at age 18 (d=0.035) in 2013 dollars. Weights applied by sex-race specific education distributions in Arizona. Earnings adjusted for labor force participation, health benefits, ability, and productivity growth (Rouse, 2007; Carneiro et al., 2011). Welfare includes TANF, SNAP, housing vouchers, and state welfare programs (excluding Social Security payments). High school graduate status adjusted for college enrollment/completion rates by sex/race. High school dropouts are 18,100 (Table 1).

The social loss from high school failure is very large. For each student who does not complete high school compared to a student who does, the social impact is $421,280. Most of this impact is attributable to higher earnings, but there are also substantial economic effects in terms of crime and health. Aggregated across a cohort of students aged 18 in any given year, the 18,100 dropouts in Arizona represents a social loss of $7.6 billion. By comparison, the state and local government general revenue across the state is only $44 billion annually (Appendix A2). This loss is a present value over the lifetime of the dropout. However, each year there is a new cohort of high school seniors for whom the same economic calculus applies.

Table 3

The Fiscal Loss across High School Dropouts in Arizona

	Total Fiscal Burden per High School Dropout (18-year-old)	Aggregate Fiscal Burden per Age Cohort ($ millions)
State and Local Fiscal Impacts:		
College	$(7,470)	$(135)
Health	$7,080	$128
Crime	$29,020	$525
Welfare	$1,340	$24
Tax Contributions	$23,210	$420
METB	$1,170	$21
Burden compared to HS Graduate	**$54,350**	**$984**
Federal Impacts:		
College	$(830)	$(15)
Health	$17,690	$320
Crime	$6,810	$123
Welfare	$8,110	$147
Tax Contributions	$48,360	$875
METB	$1,240	$22
Burden compared to HS Graduate	**$81,380**	**$1,473**
Total Fiscal Burden All levels of Government	**$135,730**	**$2,457**

Sources: CPS data 2009-2013; Arizona tax code. See sources in Table 2. *Notes:* Dollar amounts rounded in present values at age 18 (d=0.035) in 2013 dollars. Amounts weighted by sex-race specific education distributions in Arizona. College costs net of tuition. Taxes are income tax (federal); state/county sales and property tax (state). Income tax payments adjusted for labor force participation, health benefits, ability, and productivity growth. Welfare burden is only administrative costs from Table 2. High school graduate adjusting for college enrollment/completion rates by sex/race. High school dropouts are 18,100 (Table 1).

As shown in Table 3, the fiscal loss from high school failure is also very large. For each student who does not complete high school compared to a student who does, the fiscal impact for state and local government in Arizona is $54,350. Similarly, a large proportion of this loss is attributable to lost state tax payments; but there are also sizeable costs to the criminal justice system, which is primarily a state and local responsibility. Across a cohort of dropouts, the fiscal loss to state/local governments amounts to $984 million. This amount is more than 2% of the entire state/local government spending in Arizona annually.

In addition, there are federal consequences from high school failure and in fact these are larger than the state/local consequences. The largest loss is attributable to lower income and hence lower income tax payments. But in Arizona the federal government share of public medical spending is high and so there are significant economic consequences for health programs. Per student, the fiscal loss is $81,380. In aggregate, the loss per cohort is $1.5 billion.

From the state's perspective, both sets of fiscal losses are salient. Although the Arizona state Treasurer's Office may only directly be affected by the state/local fiscal loss, the federal losses are relevant. First, federal government revenues are spent in Arizona (in fact, for every dollar paid into the federal government by Arizona taxpayers, the federal government spends over $1.15 within the state). Second, direct federal government transfers to Arizona state and local government exceed $13 billion annually. Third, many federal programs require matching or maintenance-of-effort funding at the state level; thus, spending at each level of government is directly linked together. Overall, therefore, the fiscal loss per high school dropout in Arizona is $135,730 or $2.5 billion. To emphasize, this is annual loss in that each year there is a new cohort of dropouts. Also, as discussed below, it is almost certainly a conservative estimate of the full loss.

5.2 Losses for Disconnected Youth

For disconnected youth there are immediate annual losses and then losses stretching over the lifetime. These are calculated separately. First, the annual economic consequence is estimated for each disconnected youth aged between 16 and 24, i.e. the amount lost each year per disconnected youth. Second, the total lifetime loss is estimated for a youth who is a disconnected youth at aged 20 and remains so until age 24 (or experiences at least five years in this status). This youth not only faces an economic loss during those five years, but will also face one during later adulthood. These amounts are added together to estimate the total economic value for a youth with that profile.

Table 4
The Social and Fiscal Loss of Disconnected Youth in Arizona

	Losses per Disconnected Youth		Aggregate Burden per Youth Cohort ($ millions)	
	Social	**Fiscal**	**Social**	**Fiscal**
Annual loss during youth	$34,430	$12,350	$6,308	$2,263
Loss over youth years	$155,470	$55,770	$28,482	$10,217
Loss in adulthood	$539,620	$178,710	$98,858	$32,740
Lifetime total	**$695,090**	**$234,480**	**$127,340**	**$42,957**

Sources: Appendices A3 and A4. *Notes:* Loss over youth years assumes five years of disconnected youth status. Disconnected youth cohort is 0.183 million individuals (Table 1). 2013 present value dollars.

The economic values for disconnected youth across Arizona are given in Table 4. Details on these figures are given in Appendices A3 and A4. Expressed as annual amounts, the losses for each year of disconnected youth in Arizona are $34,430 from the social perspective are $13,890 from the taxpayer perspective. Much of this loss is driven by higher spending on the criminal justice system: during youth, earnings gaps are not large (with many youth in college). However, disconnected youth is a status that typically persists during youth and has adult consequences. The annual loss does not capture the full loss. Adding together the full loss during the youth years and the adult loss, the total social loss per disconnected youth is $695,090. The total fiscal loss is $234,480. (As an approximation, 40% of this fiscal loss will be incurred directly at the Arizona state government level; with the remainder incurred by the federal government). These are lifetime present value amounts for a youth aged 20. In other words, if a youth aged 20 'switched' out of disconnected youth status, these would be economic savings to society and the taxpayer.

Expressed across a cohort of disconnected youth, these economic magnitudes are very large. Annually, there are 183,200 disconnected youth aged 16-24. The social loss associated with their being disconnected from education or work is $6.3 billion annually. The fiscal loss is $2.3 billion. Again, however, the full losses are larger because of the persistent effect of low skills and low work experience. In aggregate, for each cohort of disconnected youth the lifetime social loss $127.3 billion. The fiscal loss is $43.0 billion. These are discounted amounts reflecting the full lifetime loss. Approximately, the total fiscal loss is just below the annual Arizona state budget (Appendix A2).

Several important conclusions flow from these results. First, the losses are very high, both in absolute terms and relative to other economic metrics. They are similar in size to those calculated in other studies.[11] This finding applies generally across each group. For example, the losses per dropout each year exceed the amount that is spent on K-12 schooling in Arizona. For disconnected youth, these annual losses are equivalent to more than one-quarter of median income in Arizona. Correspondingly, the lifetime dropout losses are magnitudes larger than total educational expenditures over the entire school K-12 period. Second, the future loss from disconnected youth is far greater – three times greater – than the immediate loss. Even as society is jeopardizing potential, the big economic loss from disconnected youth is that these individuals will not progress through adulthood to be economically independent. Finally, the fiscal losses from dropouts and disconnected youth are not equally spread between federal and state/local government. Generally, the federal government disproportionately loses income tax revenue; and state/local governments disproportionately pay for criminal activity, education, and welfare (with medical expenditures split approximately evenly). Moreover, the timing of the loss matters. For disconnected youth, the immediate state fiscal impact substantially exceeds the federal fiscal impact – states face a much greater immediate loss when disconnected youth rates are high. It is only when looked at over the longer term that the federal losses exceed the state/local ones. Ultimately, however, the state of Arizona cannot discount the federal amounts: as noted above, these are in effect all spent within the state.

5.3 Losses for Communities Across Arizona

Local communities face substantial challenges: they face the social loss over the long-term (as dropouts and disconnected youth often 'inherit' the economic conditions of past generations). With few job prospect and weak skills, these youth often remain in their local communities (e.g. incarcerated youth return to their home community on release), whereas more educated youth migrate to large cities with more flexible labor markets. A community with high proportions of disconnected youth will have to support those youth through adulthood. Compounding this situation, local communities lack a sufficient tax base from which to make investments to support these youth. Finally, local communities with high numbers of dropouts or disconnected youth face many 'intangibles' – depressed local property prices; poor investment climate; neighborhood insecurity and blight.

Using the above economic method, the social and fiscal losses are calculated for ten selected localities across Arizona: Miami; Avondale; Mesa; Tucson; Phoenix; Goodyear; Sahuarita; Gilbert; Tempe; and Oro Valley. These local calculations are derived from the national estimates, adapted using local educational attainment levels and local economic conditions and adjusted for local prices using wage rate indices.[12]

To identify differences across localities, data are extracted from the 5% Public-Use Microdata Sample of the American Community Survey (ACS-PUMS), pooled across the years 2006 through 2010.[13] Using these individual-level data we identify disconnected youth for each locality. Dropout rates are calculated from Arizona Department of Education data, disaggregated at the school and district level. Descriptive social and economic information for each locality are given in Appendix A3 and Appendix A4.

Calculations for each locality are given in Appendix B. These show that in each community there is a substantial economic loss associated with high school failure and high proportions of disconnected youth. These communities reflect some of the variation across the nation. Even small communities may face a substantial local loss from having high rates of school failure and disconnected youth. For mid-sized communities, the fiscal consequences are in the hundreds of millions. For a large city, such as Phoenix, the annual fiscal consequences are billions of dollars and the social loss is even larger.[14]

5.4 Sensitivity Analysis

The above analysis is likely to be a conservative estimate of the full economic loss. Importantly, our economic calculations exclude some key impacts either because there is insufficient data on their direct association with youth characteristics or because the impacts cannot be easily expressed in money terms. For example, there are broader health and psychological costs to inactivity; there is also an inestimable value associated with the avoidance of incarceration (and with welfare receipt). There are costs to families from disconnected youth behaviors (including residential costs and direct expenditures, particularly on health care); and these families may in turn be constrained in their own participation in the labor market. Family repercussions may even be perpetuated (as disadvantage is passed through generations, Lee et al., 2009). Commu-

nity losses are also underestimated: local residents experience higher crime as well as the threat of higher crime. These community losses may also persist, as disadvantaged neighborhoods produce more offenders and after incarceration these ex-offenders return to their local neighborhoods (Sampson and Loeffler, 2010). Lastly, there may be broader costs to a society characterized by deep inequality, low economic mobility, civic disengagement, and 'mass incarceration' (Stiglitz, 2012). These consequences are not included in the above calculations.

Also, projections into the future suggest greater adversity. Trends for dropouts and disconnected youth depend fundamentally on developments in the labor market. Yet, their prospects have deteriorated with the Great Recession, leading to lower labor force participation and higher unemployment. These effects have lasting consequences: even if the youth labor market improves, youth productivity is projected to be lower for years into the future. Demographic and structural changes are also likely to diminish opportunities for the low-skilled.[15] Arizona is not immune to these broader trends.[16] Also, from the fiscal perspective, criminal justice system costs and health care costs are likely to accelerate. The effect is not mediated through changes in criminal activity and health status but by their economic consequences. Broadly, youth criminal activity is stable, but taxpayer expenditures on youth crime are escalating. Similarly, with the exception of obesity, youth health is not worsening; but the costs of health care treatments are increasing.[17]

6. INVESTING IN DROPOUTS AND DISCONNECTED YOUTH

Clearly, these losses are much larger than government spending to help disconnected youth and high school dropouts. Leaving aside the K-12 school system (and postsecondary education), annual federal and state spending on programs for those aged 16-24 is at most $9 billion; divided across 6.7 million disconnected youth this amounts to less than $1,500 per youth (Belfield and Levin, 2013). Federal funding on the five major youth transition programs totals less than $500 per capita in Arizona (Mares and Jordan, 2012, Table 3). On a generous accounting, governments are spending far less on alleviating this loss than the total loss itself: most reforms are significantly under-funded. But they are also very small-scale, serving a few hundred youth at a time; and they are rehabilitative rather than preventative, with more juvenile justice programs for offenders than programs to prevent students from offending. Evidence shows that investments before dropouts disconnected youth become involved in the criminal justice system are much more efficient than training programs for ex-offenders.

It is important to recognize that these youth have multiple obstacles to overcome; many have experienced poor schooling, family disadvantage, and community deprivation. Also, youth do not follow simple and stable paths through early adulthood: teenage mothers will have family responsibilities but may transition back into the workforce by age 24, for example; youth may engage in early substance abuse but later enroll in college; and dropouts may complete their high school diplomas as adults. A single, small-scale intervention – even if it can be accurately targeted – is unlikely to effectively overcome all these obstacles. Indeed, governments and policymakers must consider both the youth's circumstances and her local opportunities. Without available jobs at living wages, few youth will prosper and governments do have a role to play in shaping the labor market (Bell and Blanchflower, 2011, Table 1).

Of course, youth behavior reflects their incentives and these can be altered so that youth have more – and clearer – opportunities to build secure economic futures for themselves. Ultimately, however, new policies will have to be introduced. Such policies might those to: (a) promote job growth – to provide youth with opportunities for economic independence; (b) improve high school and community college programs – to allow youth to invest in their future; and (c) fund social programs – for both prevention and rehabilitation, and to help with behavioral and health-related challenges. These policies will inevitably require new resources and ideally they should be funded both at the federal and state/local levels. But as states bear the loss from disconnected youth, they should attempt to fund these policies regardless of federal action. The economic consequences of failing to invest in the nation's youth are simply too high.

In the last decade conditions have dramatically worsened for disconnected youth: the decade is a 'depleted decade' in the sense that, even as youth have not become more delinquent, the economic conditions they face have declined. Labor market opportunities for disconnected youth have sharply diminished as the cost of higher education – allowing for skills upgrading - has risen substantially. Over the past decade, the youth poverty rate has risen by more than one-quarter: 26% of youth are now in poverty. With fewer prospects, these youth now face a heavier loss if

they seek to improve their skills through post-secondary education. Moreover, future trends are likely to continue to be adverse. The present Great Recession has had an especially detrimental impact on youth – even more than recessions typically do. Broad occupational and labor market trends – as well as demographic patterns – favor skilled workers. Fiscal trends – the rising costs of incarceration and health care – further increase the pressure to invest in dropouts and disconnected youth. These results hold nationally and across Arizona.

In conclusion, we emphasize that this study looks at only at the resource loss associated with failing to make good investments and establishes that the return on investment is likely to be high. It does not address the much broader implications of a lack of disconnected, not just for individuals but also across the state of Arizona. These social and moral perspectives should be paramount, not least because of the economic cost of failure both now and in future generations.

NOTES

1. See CRS (2009), Fernandes-Alcantara (2012), Belfield and Levin (2013) and Belfield, Levin, and Rosen (2012) as well as reports from the Heldrich Center (2012) and the Pew Trusts (2012).
2. The two categories overlap. Using longitudinal data, it is possible to distinguish 'chronic' and 'weakly attached' disconnected youth. Chronic disconnected youth have no employment or post-secondary educational experiences; weakly attached disconnected youth have some intermittent work history or post-secondary schooling but which is insufficient to ensure immediate or future economic independence. The former group is mostly composed of high school dropouts.
3. This number is derived from the 15,522 public school dropouts plus a 20% dropout rate applied across the students not in the public school records (i.e. the gap between the Census population figure of 90,700 and the public school count of 77,610).
4. This number is derived from individual data from the 2012 ACS for Arizona. The dataset includes 7,605 youth aged 16-24 across the state and has information on their educational status and their earnings. Disconnected youth are identified as those not in education and with zero earnings in that year, i.e. in the same way as disconnected youth. This definition yields a percentage of 22.2%.
5. Belfield et al. (2012); Belfield and Levin (2013). See also Cohen and Piquero (2009).
6. Equivalently, the youth could change category for five additional years during their youth period.
7. There are many possible perspectives. As examples, school districts might look at the loss from suspending students; local health authorities might consider the loss from substance abuse; and local residents might be most concerned about criminal behavior.
8. http://www.taxadmin.org/fta/rate/12taxdis.html.
9. Using Add Health, Belfield et al. (2012) calculate that 28 percent of disconnected youth are on Medicaid, compared to 5.3 percent of the full youth cohort.
10. Private health valuations are typically expressed in Quality Adjusted Life Years (QALYs), i.e. years of full health. In comparison to dropouts, high school graduates are expected to have 1.5-2.4 more QALYs over their lifetime (Muennig et al., 2010; Schoeni et al. (2011). Conservatively, society values each QALY at approximately $100,000 (Cutler and Lleras-Muney, 2010). These QALY estimates do not account for differences in private health expenditures (see Wong et al., 2005).
11. As well as our work, see Trostel (2009); Sum et al. (2009); and EMSI (2014). In fact all these studies find large fiscal and social benefits from education. The last of these estimates fiscal benefits from community college that are 6.8 times the fiscal costs, which is a very large return to the taxpayer (EMSI, 2014). Trostel (2010) estimates the fiscal benefits per community college graduate at $140,000. However, it is difficult to compare or reconcile different estimates of the returns: each study is using a different student population, different assumptions, and (importantly) different discount rates (EMSI (2014) uses a social discount rate of 1.1%, which is much lower than our 3.5%). As such, these studies are independent corroborations of the same general impact of education.
12. For tax effects, state-specific income and consumption tax rates are applied. For crime effects, crime costs are weighted based on the indices of violent and property crime rates for these ten localities (see Appendix A4). This assumes all dropouts commit the same proportion of crime in their community, which is conservative. State-specific weights are used for health care. For all domains, amounts are weighted to account for local price levels.
13. The dataset contains 12+ million individual records across 2,069 areas. These areas – Public-Use Microdata Areas or PUMAs – contain at least 100,000 persons and follow county, city or state boundaries. Because PUMA groupings are by population size (100,000 persons), it is not possible to compare urban versus rural areas with any precision. For analysis population weights are applied.
14. Even though their overall estimates are lower than ours, Burds-Sharp and Lewis (2014) also find relatively high rates of disconnected youth in Phoenix.
15. Greater automation is reducing the number of routine, unskilled jobs; and offshore outsourcing has also reduced the need for U.S. workers with low skill levels. Demographic trends also play a role: job growth is strongest in health-related services for the baby boomer generation; yet all these jobs require some postsecondary education, license, or credential (see Lockwood and Wolf, 2012; Elsby et al., 2011).

16. Arizona's labor force is 3 million persons and the unemployment rate is 7.5%. Employment is evenly distributed across: trade, transport, and utilities; professional/business services; education and health; leisure; and government services (www.bls.gov/eag/eag.az.htm, BLS data for January 2014).
17. Detention settings are very expensive; and states are increasingly required to provide health care for prisoners (Livsey et al., 2009; Hughes, 2006). There are both demand and supply pressures on health care costs, as well as impacts from the Affordable Care Act (Glied, 2003).

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APPENDIX A

A1: Formulae for Calculation of the Aggregate Social and Fiscal Losses

Social burden (S):

$S = Y + H + C_F + C_V + W_S + E + m + Y_G$

Lost gross earnings (Y)
Additional health expenditures (H)
Criminal Justice System expenditures and victim costs ($C_F + C_V$)
Welfare and social service payments – non-transfers (W_S)
Public and private cost of education (E)
Marginal Excess Tax Burden (m)
Lost productivity spillovers across the workforce (Y_G)

Taxpayer/fiscal burden (F):

$F = T + H_F + C_F + W_F + W_S - E$

Lost taxes (T)
Additional health care paid for by the taxpayer (H_F)
Expenditures for the criminal justice system and corrections (C_F)
Welfare and social service payments – all ($W_F + W_S$)
Savings in lower education spending (E_F)

All economic calculations are reported in 2013 dollars and in present values at age 18 or 20. All present values are calculated using a 3.5% discount rate. All figures are rounded to nearest $10. Prices are adjusted for Arizona purchasing power. Calculations are based on sex and racial groups in Arizona.

A2: Government Revenues and Expenditures in Arizona

	Annual Revenue and Spending ($ millions)	
	State	**Local**
Revenue	$38,029	$28,807
General revenue	$28,466	$23,660
Transfers from federal government	$12,059	$967
Transfers from state to local govt		$7,811
Transfers from local to state govt	$301	
Property tax	$758	$6,346
Sales tax	$7,623	$2,656
Individual income tax	$2,864	
Corporate income tax	$560	
Other tax	$257	$363
Other revenues	$13,403	$10,638
Expenditure	$32,875	$28,491
Intergovernmental expenditure	$8,668	$164
Education	$4,066	$9,482
Public welfare	$8,890	$315
Health (incl. hospitals)	$1,776	$1,161
Police protection	$229	$1,870
Fire protection	–	$1,057
Corrections	$866	$599
Judicial/legal	$176	$752
Other items	$8,204	$13,090

Source: U.S. Census Bureau, 2011 *Annual Surveys of State and Local Government Finances*. Table 1, tabulation date July 2013. www.nasbo.org. *Notes:* Other tax revenues are motor vehicle, corporate, and other. Other charges are miscellaneous general revenue, insurance trust revenue, utility revenue, and other charges. Direct expenditure is net of payments on borrowing.

A3: Disconnected Youth Social and Fiscal Burdens during Youth

	Immediate Loss per Disconnected Youth (Annual Amount at Ages 16-24)	
	Social	**Fiscal**
Gross earnings (Y)	$8,930	–
Taxes (T)	–	$1,540
Crime (CF)	$10,460	$10,070
Crime (CV)	$15,130	–
Health (HF)	$2,190	$2,150
Welfare (WF)	–	$320
Welfare (WS)	$400	$390
Education (EF)	($2,090)	($2,130)
Education (EP)	($1,980)	–
Marginal Excess Tax Loss (m)	$1,390	–
Total	**$34,430**	**$12,350**
Total over five years of youth	**$155,470**	**$55,770**

Source: See Notes to Table 2 and Belfield and Levin (2012). *Notes:* Present value at age 20 (d=0.035). 2013 dollars and Arizona price level. Fiscal loss includes all levels of government.

A4: Disconnected Youth Social and Fiscal Losses during Adulthood

	Loss per Disconnected Youth in Adulthood (After Age 24)	
	Social	**Fiscal**
Gross earnings (Y)	$400,110	–
Taxes (T)	–	$110,800
Crime (CF)	$14,090	$14,120
Crime (CV)	$34,320	–
Health (HF)	$42,810	$43,390
Welfare (WF)	–	$10,400
Marginal Excess Tax Loss (m)	$7,420	–
Productivity spillovers	$40,870	–
Total	**$539,620**	**$178,710**

Source: See Notes to Table 2 and Belfield and Levin (2012). *Notes:* Present value at age 20 (d=0.035). 2013 dollars and Arizona price level. Fiscal loss includes all levels of government.

A5: Social and Economic Data across Arizona

	Population	Labor Force	Unemployment Rate (%)	Weekly Wage: Private Sector	Wage Quotient Relative to US	Weekly Wage: Local Govt	Violent Crime (Per 1000 Persons)	Property Crime (Per 1000 Persons)	Grad. Rate (%)
Avondale [a]	78,526	36,460	7.7	$903	1.05	$991	2	45	76.6
Gilbert [a]	221,140	114,759	5.2	$903	1.05	$991	1	19	86.7
Goodyear [a]	69,648	28,889	8.0	$903	1.05	$991	2	32	82.3
Mesa [a]	452,084	222,402	6.5	$903	1.05	$991	4	33	78.6
Miami [b]	1,837	788	11.0	$728	0.81	$628	14	39	75.8
Oro Valley [c]	41,388	17,974	6.0	$771	0.91	$777	1	18	85.7
Phoenix [a]	1,489,000	725,667	6.8	$903	1.05	$991	1	18	74.4
Sahuarita [c]	26,289	11,673	5.9	$771	0.91	$777	1	15	77.4
Tempe [a]	166,842	99,342	5.9	$903	1.05	$991	5	49	81.5
Tucson [c]	524295	453,795	6.9	$771	0.91	$777	6	0	77.9
Arizona	6,553,000	3,010,584	7.9	856	0.99	894	4	33	75.9

Sources: Census, 2013; FBI Uniform Crime Report 2010. Offenses known to law enforcement, at http://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2010/crime-in-the-u.s.-2010/tables/10tbl08.xls/view. Wages from BLS at county-level. Arizona Dept. Of Administration, Employment And Population Statistics, CES/LAUS Unit. Average For 2013. Education data: www.azed.gov/research-evaluation/graduation-rates/. *Notes:* [a] Maricopa county; [a] Gila county; [c] Pima county.

APPENDIX B

B1: Avondale

DROPOUTS	State of Arizona	Avondale
Youth Population, ages 16-24	825,300	
Population Cohort of 18-year-olds	90,700	1,180
Public High School Cohort, 2011-12	77,800	
5-year graduates	62,200	
5-year graduation rate (%)	80.0	
Dropouts (public + population estimates)	18,100	250
Graduation Rate (%)	80.0	78.7
Per High School Dropout:		
Social Loss	$421,300	$439,400
State/local Fiscal Loss	$54,400	$56,600
Federal Fiscal Loss	$81,400	$86,000
Total Fiscal Loss	$135,800	$142,600
Per High School Class ($ millions):		
Social Loss	$7,625.17	$109.99
State/local Fiscal Loss	$983.74	$14.17
Federal Fiscal Loss	$1,472.98	$21.53
Total Fiscal Loss	$2,456.71	$35.70
DISCONNECTED YOUTH	**Arizona**	**Avondale**
Disconnected Youth Population	183,200	2,110
Disconnected youth rate	22.2	21.4
Per Disconnected Youth		
Social loss: annual during youth	$34,400	$34,800
Social loss over youth years	$155,500	$157,000
Social loss: lifetime total	$695,100	$725,100
Fiscal loss: annual during youth	$12,400	$12,400
Fiscal loss over youth years	$55,800	$56,100
Fiscal loss: lifetime total	$234,500	$259,700
Per Disconnected Youth Cohort Aged 16-24 ($ millions):		
Social loss: annual during youth	$6,308	$73.25
Social loss over youth years	$28,482	$330.49
Social loss: lifetime total	$127,340	$1,526.34
Fiscal loss: annual during youth	$2,263	$26.10
Fiscal loss over youth years	$10,217	$118.09
Fiscal loss: lifetime total	$42,957	$546.67

Local losses adapted from state loss adjusting for local price levels, wages, crime rates, state/local tax rates, sex/racial composition of population, and high school graduation rates. Amounts calculated over lifetime as present values in 2013 dollars. Details of calculations given in Appendix A.

B2: Gilbert

DROPOUTS	State of Arizona	Gilbert
Youth Population, ages 16-24	825,300	
Population Cohort of 18-year-olds	90,700	2,960
Public High School Cohort, 2011-12	77,800	
5-year graduates	62,200	
5-year graduation rate (%)	80.0	
Dropouts (public + population estimates)	18,100	340
Graduation Rate (%)	80.0	88.7
Per High School Dropout:		
Social loss	$421,300	$414,200
State/local Fiscal Loss	$54,400	$44,800
Federal Fiscal Loss	$81,400	$84,400
Total Fiscal Loss	$135,800	$129,200
Per High School Class ($ millions):		
Social Loss	$7,625.17	$138.65
State/local Fiscal Loss	$983.74	$15.00
Federal Fiscal Loss	$1,472.98	$28.25
Total Fiscal Loss	$2,456.71	$43.25
DISCONNECTED YOUTH	**Arizona**	**Gilbert**
Disconnected Youth Population	183,200	4,560
Disconnected youth rate	22.2	16.5
Per Disconnected Youth		
Social loss: annual during youth	$34,400	$28,400
Social loss over youth years	$155,500	$128,100
Social loss: lifetime total	$695,100	$683,000
Fiscal loss: annual during youth	$12,400	$10,000
Fiscal loss over youth years	$55,800	$45,200
Fiscal loss: lifetime total	$234,500	$221,600
Per Disconnected Youth Cohort Aged 16-24 ($ millions):		
Social loss: annual during youth	$6,308	$129.53
Social loss over youth years	$28,482	$584.26
Social loss: lifetime total	$127,340	$3,115.16
Fiscal loss: annual during youth	$2,263	$45.61
Fiscal loss over youth years	$10,217	$206.16
Fiscal loss: lifetime total	$42,957	$1,010.72

Local losses adapted from state burden adjusting for local price levels, wages, crime rates, state/local tax rates, sex/racial composition of population, and high school graduation rates. Amounts calculated over lifetime as present values in 2013 dollars. Details of calculations given in Appendix A.

B3: Goodyear

DROPOUTS	State of Arizona	Goodyear
Youth Population, ages 16-24	825,300	
Population Cohort of 18-year-olds	90,700	1,010
Public High School Cohort, 2011-12	77,800	
5-year graduates	62,200	
5-year graduation rate (%)	80.0	
Dropouts (public + population estimates)	18,100	160
Graduation Rate (%)	80.0	84.6
Per High School Dropout:		
Social Loss	$421,300	$428,400
State/local Fiscal Loss	$54,400	$57,800
Federal Fiscal Loss	$81,400	$85,100
Total Fiscal Loss	$135,800	$142,900
Per High School Class ($ millions):		
Social Loss	$7,625.17	$66.35
State/local Fiscal Loss	$983.74	$8.95
Federal Fiscal Loss	$1,472.98	$13.18
Total Fiscal Loss	$2,456.71	$22.13
DISCONNECTED YOUTH	**Arizona**	**Goodyear**
Disconnected Youth Population	183,200	1,820
Disconnected youth rate	22.2	20.9
Per Disconnected Youth		
Social loss: annual during youth	$34,400	$31,800
Social loss over youth years	$155,500	$143,500
Social loss: lifetime total	$695,100	$707,000
Fiscal loss: annual during youth	$12,400	$11,100
Fiscal loss over youth years	$55,800	$50,200
Fiscal loss: lifetime total	$234,500	$276,000
Per Disconnected Youth Cohort Aged 16-24 ($ millions):		
Social loss: annual during youth	$6,308	$57.84
Social loss over youth years	$28,482	$261.03
Social loss: lifetime total	$127,340	$1,286.03
Fiscal loss: annual during youth	$2,263	$20.19
Fiscal loss over youth years	$10,217	$91.31
Fiscal loss: lifetime total	$42,957	$502.04

Local losses adapted from state burden adjusting for local price levels, wages, crime rates, state/local tax rates, sex/racial composition of population, and high school graduation rates. Amounts calculated over lifetime as present values in 2013 dollars. Details of calculations given in Appendix A.

B4: Mesa

DROPOUTS	State of Arizona	Mesa
Youth Population, ages 16-24	825,300	
Population Cohort of 18-year-olds	90,700	5,570
Public High School Cohort, 2011-12	77,800	
5-year graduates	62,200	
5-year graduation rate (%)	80.0	
Dropouts (public + population estimates)	18,100	1,180
Graduation Rate (%)	80.0	78.8
Per High School Dropout:		
Social Loss	$421,300	$437,700
State/local Fiscal Loss	$54,400	$53,900
Federal Fiscal Loss	$81,400	$86,000
Total Fiscal Loss	$135,800	$139,900
Per High School Class ($ millions):		
Social Loss	$7,625.17	$516.43
State/local Fiscal Loss	$983.74	$63.59
Federal Fiscal Loss	$1,472.98	$101.47
Total Fiscal Loss	$2,456.71	$165.06
DISCONNECTED YOUTH	**Arizona**	**Mesa**
Disconnected Youth Population	183,200	11,940
Disconnected youth rate	22.2	21.1
Per Disconnected Youth		
Social loss: annual during youth	$34,400	$34,400
Social loss over youth years	$155,500	$155,300
Social loss: lifetime total	$695,100	$722,200
Fiscal loss: annual during youth	$12,400	$12,300
Fiscal loss over youth years	$55,800	$55,700
Fiscal loss: lifetime total	$234,500	$247,300
Per Disconnected Youth Cohort Aged 16-24 ($ millions):		
Social loss: annual during youth	$6,308	$410.56
Social loss over youth years	$28,482	$1,853.51
Social loss: lifetime total	$127,340	$8,619.46
Fiscal loss: annual during youth	$2,263	$146.80
Fiscal loss over youth years	$10,217	$664.78
Fiscal loss: lifetime total	$42,957	$2,951.53

Local losses adapted from state burden adjusting for local price levels, wages, crime rates, state/local tax rates, sex/racial composition of population, and high school graduation rates. Amounts calculated over lifetime as present values in 2013 dollars. Details of calculations given in Appendix A.

B5: Miami

DROPOUTS	State of Arizona	Miami
Youth Population, ages 16-24	825,300	
Population Cohort of 18-year-olds	90,700	50
Public High School Cohort, 2011-12	77,800	
5-year graduates	62,200	
5-year graduation rate (%)	80.0	
Dropouts (public + population estimates)	18,100	10
Graduation Rate (%)	80.0	80.9
Per High School Dropout:		
Social Loss	$421,300	$401,200
State/local Fiscal Loss	$54,400	$72,000
Federal Fiscal Loss	$81,400	$68,500
Total Fiscal Loss	$135,800	$140,500
Per High School Class ($ millions):		
Social Loss	$7,625.17	$3.80
State/local Fiscal Loss	$983.74	$0.68
Federal Fiscal Loss	$1,472.98	$0.65
Total Fiscal Loss	$2,456.71	$1.33
DISCONNECTED YOUTH	**Arizona**	**Miami**
Disconnected Youth Population	183,200	60
Disconnected youth rate	22.2	25.3
Per Disconnected Youth		
Social loss: annual during youth	$34,400	$41,200
Social loss over youth years	$155,500	$186,000
Social loss: lifetime total	$695,100	$661,200
Fiscal loss: annual during youth	$12,400	$14,700
Fiscal loss over youth years	$55,800	$66,300
Fiscal loss: lifetime total	$234,500	$230,900
Per Disconnected Youth Cohort Aged 16-24 ($ millions):		
Social loss: annual during youth	$6,308	$2.39
Social loss over youth years	$28,482	$10.79
Social loss: lifetime total	$127,340	$38.35
Fiscal loss: annual during youth	$2,263	$0.85
Fiscal loss over youth years	$10,217	$3.85
Fiscal loss: lifetime total	$42,957	$13.39

Local losses adapted from state burden adjusting for local price levels, wages, crime rates, state/local tax rates, sex/racial composition of population, and high school graduation rates. Amounts calculated over lifetime as present values in 2013 dollars. Details of calculations given in Appendix A.

B6: Oro Valley

DROPOUTS	State of Arizona	Oro Valley
Youth Population, ages 16-24	825,300	
Population Cohort of 18-year-olds	90,700	850
Public High School Cohort, 2011-12	77,800	
5-year graduates	62,200	
5-year graduation rate (%)	80.0	
Dropouts (public + population estimates)	18,100	110
Graduation Rate (%)	80.0	87.0
Per High School Dropout:		
Social Loss	$421,300	$358,800
State/local Fiscal Loss	$54,400	$45,400
Federal Fiscal Loss	$81,400	$71,200
Total Fiscal Loss	$135,800	$116,600
Per High School Class ($ millions):		
Social Loss	$7,625.17	$39.79
State/local Fiscal Loss	$983.74	$5.04
Federal Fiscal Loss	$1,472.98	$7.90
Total Fiscal Loss	$2,456.71	$12.93
DISCONNECTED YOUTH	**Arizona**	**Oro Valley**
Disconnected Youth Population	183,200	890
Disconnected youth rate	22.2	17.2
Per Disconnected Youth		
Social loss: annual during youth	$34,400	$25,900
Social loss over youth years	$155,500	$116,900
Social loss: lifetime total	$695,100	$591,600
Fiscal loss: annual during youth	$12,400	$9,000
Fiscal loss over youth years	$55,800	$40,800
Fiscal loss: lifetime total	$234,500	$193,900
Per Disconnected Youth Cohort Aged 16-24 ($ millions):		
Social loss: annual during youth	$6,308	$23.00
Social loss over youth years	$28,482	$103.81
Social loss: lifetime total	$127,340	$525.34
Fiscal loss: annual during youth	$2,263	$7.99
Fiscal loss over youth years	$10,217	$36.23
Fiscal loss: lifetime total	$42,957	$172.18

Local losses adapted from state burden adjusting for local price levels, wages, crime rates, state/local tax rates, sex/racial composition of population, and high school graduation rates. Amounts calculated over lifetime as present values in 2013 dollars. Details of calculations given in Appendix A.

B7: Phoenix

DROPOUTS	State of Arizona	Phoenix
Youth Population, ages 16-24	825,300	
Population Cohort of 18-year-olds	90,700	12,703
Public High School Cohort, 2011-12	77,800	
5-year graduates	62,200	
5-year graduation rate (%)	80.0	
Dropouts (public + population estimates)	18,100	3,070
Graduation Rate (%)	80.0	75.9
Per High School Dropout:		
Social Loss	$421,300	$463,500
State/local Fiscal Loss	$54,400	$63,000
Federal Fiscal Loss	$81,400	$90,500
Total Fiscal Loss	$135,800	$153,500
Per High School Class ($ millions):		
Social Loss	$7,625.17	$1,422.47
State/local Fiscal Loss	$983.74	$193.35
Federal Fiscal Loss	$1,472.98	$277.74
Total Fiscal Loss	$2,456.71	$471.09
DISCONNECTED YOUTH	**Arizona**	**Phoenix**
Disconnected Youth Population	183,200	45,040
Disconnected youth rate	22.2	24.2
Per Disconnected Youth		
Social loss: annual during youth	$34,400	$40,200
Social loss over youth years	$155,500	$181,500
Social loss: lifetime total	$695,100	$765,900
Fiscal loss: annual during youth	$12,400	$14,800
Fiscal loss over youth years	$55,800	$66,900
Fiscal loss: lifetime total	$234,500	$294,700
Per Disconnected Youth Cohort Aged 16-24 ($ millions):		
Social loss: annual during youth	$6,308	$1,810.69
Social loss over youth years	$28,482	$8,175.12
Social loss: lifetime total	$127,340	$34,497.67
Fiscal loss: annual during youth	$2,263	$666.62
Fiscal loss over youth years	$10,217	$3,013.31
Fiscal loss: lifetime total	$42,957	$13,273.88

Local losses adapted from state burden adjusting for local price levels, wages, crime rates, state/local tax rates, sex/racial composition of population, and high school graduation rates. Amounts calculated over lifetime as present values in 2013 dollars. Details of calculations given in Appendix A.

B8: Sahuarita

DROPOUTS	State of Arizona	Sahuarita
Youth Population, ages 16-24	825,300	
Population Cohort of 18-year-olds	90,700	380
Public High School Cohort, 2011-12	77,800	
5-year graduates	62,200	
5-year graduation rate (%)	80.0	
Dropouts (public + population estimates)	18,100	90
Graduation Rate (%)	80.0	77.4
Per High School Dropout:		
Social Loss	$421,300	$359,700
State/local Fiscal Loss	$54,400	$45,400
Federal Fiscal Loss	$81,400	$71,900
Total Fiscal Loss	$135,800	$117,300
Per High School Class ($ millions):		
Social Loss	$7,625.17	$30.57
State/local Fiscal Loss	$983.74	$3.86
Federal Fiscal Loss	$1,472.98	$6.11
Total Fiscal Loss	$2,456.71	$9.97
DISCONNECTED YOUTH	**Arizona**	**Sahuarita**
Disconnected Youth Population	183,200	650
Disconnected youth rate	22.2	19.8
Per Disconnected Youth		
Social loss: annual during youth	$34,400	$25,900
Social loss over youth years	$155,500	$116,800
Social loss: lifetime total	$695,100	$593,100
Fiscal loss: annual during youth	$12,400	$9,100
Fiscal loss over youth years	$55,800	$41,100
Fiscal loss: lifetime total	$234,500	$199,100
Per Disconnected Youth Cohort Aged 16-24 ($ millions):		
Social loss: annual during youth	$6,308	$16.86
Social loss over youth years	$28,482	$76.04
Social loss: lifetime total	$127,340	$386.11
Fiscal loss: annual during youth	$2,263	$5.92
Fiscal loss over youth years	$10,217	$26.76
Fiscal loss: lifetime total	$42,957	$129.61

Local losses adapted from state burden adjusting for local price levels, wages, crime rates, state/local tax rates, sex/racial composition of population, and high school graduation rates. Amounts calculated over lifetime as present values in 2013 dollars. Details of calculations given in Appendix A.

B9: Tempe

DROPOUTS	State of Arizona	Tempe
Youth Population, ages 16-24	825,300	
Population Cohort of 18-year-olds	90,700	3,300
Public High School Cohort, 2011-12	77,800	
5-year graduates	62,200	
5-year graduation rate (%)	80.0	
Dropouts (public + population estimates)	18,100	340
Graduation Rate (%)	80.0	89.7
Per High School Dropout:		
Social Loss	$421,300	$471,100
State/local Fiscal Loss	$54,400	$66,900
Federal Fiscal Loss	$81,400	$88,600
Total Fiscal Loss	$135,800	$155,500
Per High School Class ($ millions):		
Social Loss	$7,625.17	$160.00
State/local Fiscal Loss	$983.74	$22.72
Federal Fiscal Loss	$1,472.98	$30.09
Total Fiscal Loss	$2,456.71	$52.81
DISCONNECTED YOUTH	**Arizona**	**Tempe**
Disconnected Youth Population	183,200	3,900
Disconnected youth rate	22.2	19.1
Per Disconnected Youth		
Social loss: annual during youth	$34,400	$42,800
Social loss over youth years	$155,500	$193,300
Social loss: lifetime total	$695,100	$777,900
Fiscal loss: annual during youth	$12,400	$15,600
Fiscal loss over youth years	$55,800	$70,400
Fiscal loss: lifetime total	$234,500	$288,100
Per Disconnected Youth Cohort Aged 16-24 ($ millions):		
Social loss: annual during youth	$6,308	$170.86
Social loss over youth years	$28,482	$771.65
Social loss: lifetime total	$127,340	$3,105.38
Fiscal loss: annual during youth	$2,263	$62.28
Fiscal loss over youth years	$10,217	$281.04
Fiscal loss: lifetime total	$42,957	$1,150.10

Local losses adapted from state burden adjusting for local price levels, wages, crime rates, state/local tax rates, sex/racial composition of population, and high school graduation rates. Amounts calculated over lifetime as present values in 2013 dollars. Details of calculations given in Appendix A.

B10: Tucson

DROPOUTS	State of Arizona	Tucson
Youth Population, ages 16-24	825,300	
Population Cohort of 18-year-olds	90,700	5.210
Public High School Cohort, 2011-12	77,800	
5-year graduates	62,200	
5-year graduation rate (%)	80.0	
Dropouts (public + population estimates)	18,100	1,140
Graduation Rate (%)	80.0	78.2
Per High School Dropout:		
Social Loss	$421,300	$382,900
State/local Fiscal Loss	$54,400	$58,600
Federal Fiscal Loss	$81,400	$74,500
Total Fiscal Loss	$135,800	$133,100
Per High School Class ($ millions):		
Social Loss	$7,625.17	$434.74
State/local Fiscal Loss	$983.74	$66.53
Federal Fiscal Loss	$1,472.98	$84.59
Total Fiscal Loss	$2,456.71	$151.12
DISCONNECTED YOUTH	**Arizona**	**Tucson**
Disconnected Youth Population	183,200	13,410
Disconnected youth rate	22.2	20.5
Per Disconnected Youth		
Social loss: annual during youth	$34,400	$31,400
Social loss over youth years	$155,500	$141,700
Social loss: lifetime total	$695,100	$632,300
Fiscal loss: annual during youth	$12,400	$11,200
Fiscal loss over youth years	$55,800	$50,700
Fiscal loss: lifetime total	$234,500	$251,400
Per Disconnected Youth Cohort Aged 16-24 ($ millions):		
Social loss: annual during youth	$6,308	$421.07
Social loss over youth years	$28,482	$1,900.20
Social loss: lifetime total	$127,340	$8,479.14
Fiscal loss: annual during youth	$2,263	$150.19
Fiscal loss over youth years	$10,217	$679.89
Fiscal loss: lifetime total	$42,957	$3,371.27

Local losses adapted from state burden adjusting for local price levels, wages, crime rates, state/local tax rates, sex/racial composition of population, and high school graduation rates. Amounts calculated over lifetime as present values in 2013 dollars. Details of calculations given in Appendix A.