Subject: Fwd: Pre-K is day care
From: Loren Christopher Lipsey <lipseylc@gmail.com>
Date: 2/1/2022, 9:38 AM
To: Mark Lipsey <lipseymw@gmail.com>

---------- Forwarded message ---------
From: **Noahpinion** <noahpinion@substack.com>
Date: Mon, Jan 31, 2022 at 1:12 AM
Subject: Pre-K is day care
To: <lipseylc@gmail.com>

Pre-K is day care

But free day care does sound like a good idea!

Noah Smith

Jan 31

There's an interesting new psychology paper out about the benefits of universal pre-kindergarten education. The results are not encouraging:

Samuel Hammond
@hamandcheese

Devastating new results on the effects of state-funded pre-K programs.

In policy you rarely get stronger study designs than random assignment + multi-year longitudinal follow-up.

Yikes.

doi.apa.org/doiLanding?doi…

APA PsycArticles: Journal Article

Effects of a statewide pre-kindergarten program on children's achievement and behavior through sixth grade.

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Durkin, K., Lipsey, M. W., Farran, D. C., & Wiesen, S. E. (2022). Effects of a statewide pre-kindergarten program on children's achievement and behavior through sixth grade. *Developmental Psychology*. Advance online publication. https://doi.org/10.1037/dev0001301

As state-funded pre-kindergarten (pre-K) programs expand, it is critical to investigate their short- and long-term effects. This article presents the results through sixth grade of a longitudinal randomized control study of the effects of a scaled-up, state-supported pre-K program. The analytic sample includes 2,990 children from low-income families who applied to oversubscribed pre-K program sites across the state and were randomly assigned to offers of admission or a wait list control. Data through sixth grade from state education records showed that the children randomly assigned to attend pre-K had lower state achievement test scores in third through sixth grades than control children, with the strongest negative effects in sixth grade. A negative effect was also found for disciplinary infractions, attendance, and receipt of special education services, with null effects on retention. The implications of these findings for pre-K policies and practices are discussed. (PsycInfo Database Record (c) 2022 APA, all rights reserved)

January 25th 2022

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This is an important issue right now, because "universal" preschool for 3- and 4-year-olds is part of the Build Back Better plan that Biden is trying (with difficulty) to push through the Senate right now. Before we jump into the era of national pre-K, it's important to understand what effects this kind of program has, in order to craft a policy that does the greatest good for the greatest number of people.

The study above is a very good one. It's a very large-sample study. It uses random assignment (because the students it follows got into the pre-K programs via lottery). It focuses on low-income students, who are exactly the people who need the most

help from programs like this. And it follows the kids for a very long time, in order to see long-term effects.

But at the end of the day, even a very good study is just one study. Programs differ, regions and populations differ, and the set of additional policies being enacted to help kids also differs from place to place. All these things can cause the results of various studies to be very different. So you really have to look at a whole bunch of studies, of a whole bunch of programs, in a whole bunch of places, in order to get a holistic idea of what the evidence really says.

So, I'll go through a good bit of that evidence here. But first, a preview. The upshot is that really high-quality pre-K programs do provide some educational benefit. But for the kind of mass-market pre-K programs that Biden's plan would involve, the educational benefits are probably close to nil, and for many kids are probably negative. BUT, the reason pre-K often hurts education is that kids learn even better when their parents are at home tutoring them all day.

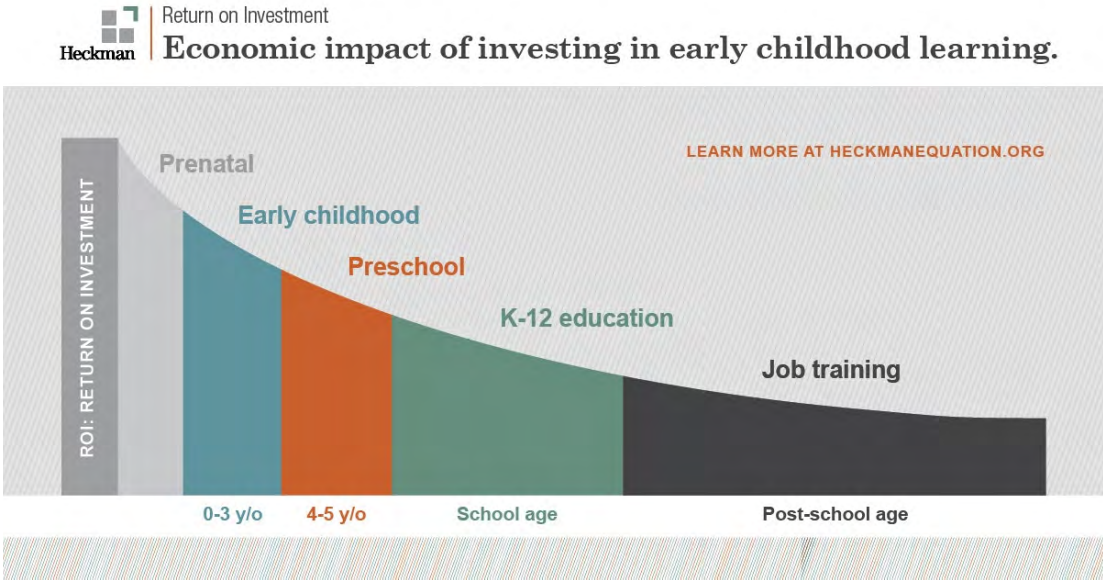
And staying home tutoring a kid all day is a lot of work. It's free labor that isn't counted in GDP statistics, and it prevents parents from going out and working in the market. Thus, even if it isn't quite as good as intensive parenting, government-funded free pre-K frees parents to go work in the market and earn money for their families.

In other words, universal pre-K is probably just universal day care. So the best option, policy-wise, is probably to **make day care free but not compulsory**. That will give parents the choice of whether to put in the time tutoring the kids at home, or accept a potentially slightly worse education in exchange for a second income for the family.

OK, so let's go to the evidence.

Why people think pre-K works: Theory and some evidence

Jim Heckman is a very accomplished empirical economist; he won the Nobel Prize for figuring out ways to reduce selection bias in empirical studies. So he's very unlikely to be the kind of person who would neglect study design or fall for spurious effects. And for many years now, Heckman has been pushing the idea of early childhood education. His famous "Heckman curve" illustrates how he thinks educational intervention works:



This makes intuitive sense; younger people's brains are more malleable, so it stands to reason that the younger we start educating them, the more of an impact we'll have. (In fact, there's evidence that the curve is wrong and later interventions work just as well, but we'll leave that for another post.)

And as you might expect, Heckman's own research finds good efficacy for early childhood interventions. For example, this 2013 paper with Garcia, Leaf & Prados followed the outcomes from the ABC/CARE program in Chapel Hill/Durham, North Carolina, which was launched in the 1970s and targeted at poor Black kids. The ABC program involved a random assignment trial, and the follow-up was very long-term, so this is a very good study. And the results are very encouraging:

> The program…has substantial beneficial impacts on health, children's future labor incomes, crime, education, and mothers' labor incomes, with greater monetized benefits for males. Lifetime returns are estimated by pooling multiple data sets using testable economic models. The overall rate of return is 13.7% per annum, and the benefit/cost ratio is 7.3.

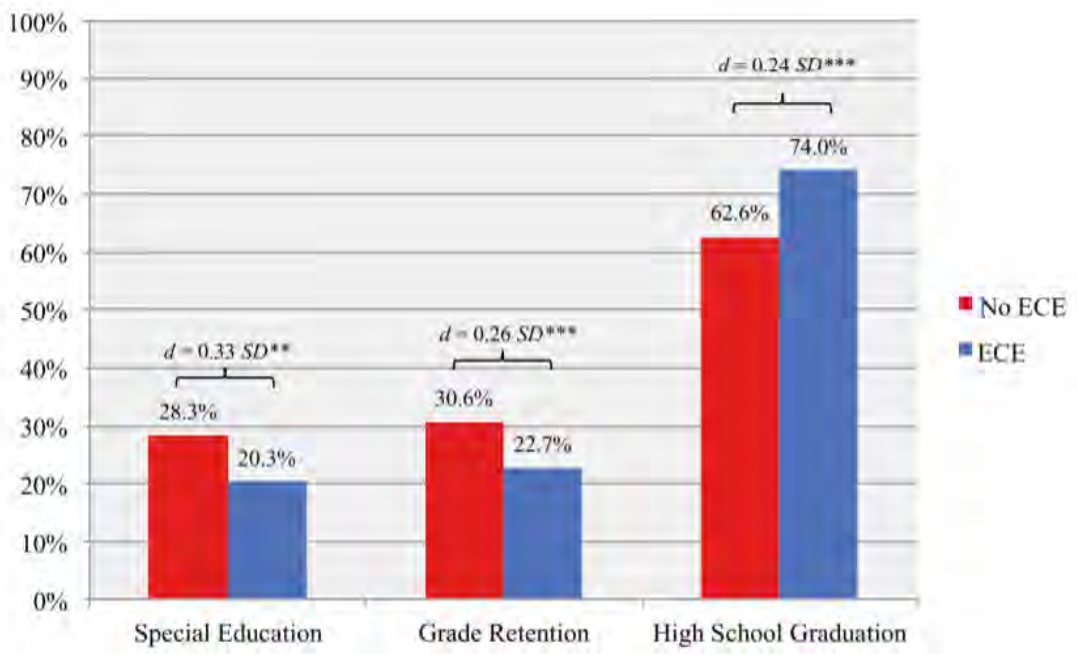
That sounds pretty damn good! And the result is echoed by other Heckman papers, such as this 2016 paper with Conti & Pinto that looks at the Perry Preschool Project, or this 2013 paper with Gertler et al. that looked at a Jamaican social work intervention for poor kids.

And of course there are papers finding these effects that don't have the name "Heckman" on them. For example, a recent paper by Gray-Lobe, Pathak & Walters looked at a large Boston preschool project with lottery admissions, and found:

> Preschool enrollment boosts college attendance, as well as SAT test-taking and high school graduation. Preschool also decreases several disciplinary measures including juvenile incarceration, but has no detectable impact on state achievement test scores.

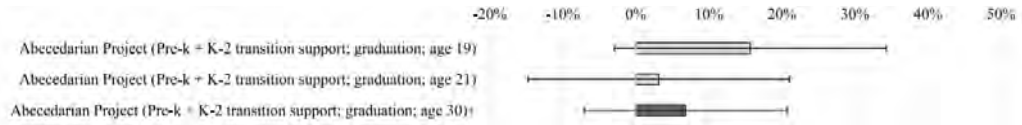
(Note that there's effects on life outcomes, but no effect on test scores; that's something we'll come back to in a bit.)

In fact, a 2017 meta-analysis by McCoy et al. looked at 22 studies of early childhood education published between 2007 and 2016, and found modest but statistically significant benefits for graduation rates, grade retention, and placement in special education. About half of these are the kind of high-quality studies we most want to see — random assignment, comparison of siblings who do and don't attend the program, regression discontinuity designs, and so on. Here's their graph:



That looks pretty good! Not spectacular, but solid.

But note that not all programs are created equal. A number of the studies look at the two programs Heckman evaluated above (in fact, Heckman is included in the meta-analysis) — the Abedecarian Project (ABC), and the Perry Preschool Project. Other programs like the Early Training Project don't look as impressive, and are weighing down the average here:



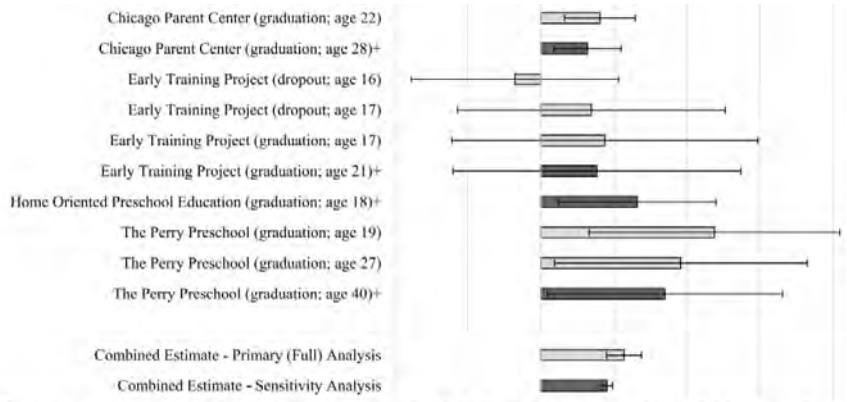
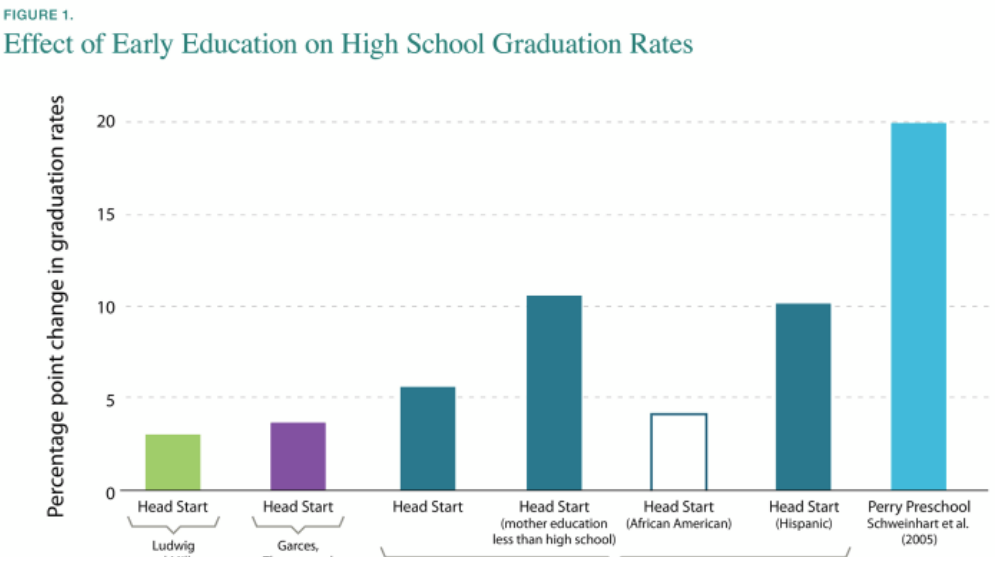


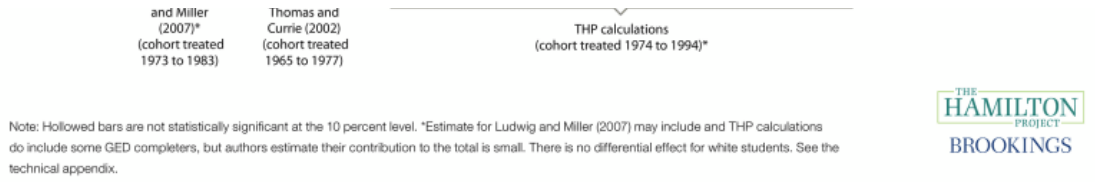
FIGURE A3. *Percentage point gain in high school graduation rates (with 95% confidence intervals) for children attending early childhood education versu control group (selected programs with available data)*

Meanwhile, there's a pretty big literature looking at the long-run effects of the Head Start program, which provides education, health services, and other services to poor kids in the U.S. These studies generally report positive results. For example, Deming (2009) concludes:

> I compare siblings who differ in their participation in the program, controlling for a variety of pre-treatment covariates. I estimate that Head Start participants gain 0.23 standard deviations on a summary index of young adult outcomes. This closes one-third of the gap between children with median and bottom quartile family income, and is about 80 percent as large as model programs such as Perry Preschool. The long-term impact for disadvantaged children is large despite "fadeout" of test score gains.

This 2016 study by Schanzenbach & Bauer also finds good effects on high school graduation and college completion (though not as good as the Perry Preschool Project). The effects look stronger for kids from more disadvantaged backgrounds, and especially strong for Hispanic kids:





Another example is Carneiro & Ginja (2014), who find persistent positive effects of Head Start on social and psychological outcomes like depression, obesity, criminality, and idleness.

So it looks like there's solid evidence that early childhood education produces positive long-term results. But a deeper look at the literature reveals that this conclusion comes with some major caveats:

1. Not all pre-K programs are created equal; some end up having no effect or even harming student outcomes
2. Effects on academic performance are much weaker than effects on other life outcomes
3. Effects aren't generally equal across students; pre-K appears to help the disadvantaged more

Let's take a look at this less encouraging evidence, then afterward we can think about what it all means.

Bad programs exist, and even good programs have trouble producing lasting academic benefits

Some studies show some pre-K programs having negative effects on kids. The paper mentioned at the beginning of this post, by Lipsey et al., is one example. It studies a From the abstract:

> This article presents the results…of a longitudinal randomized control study of the effects of a scaled-up, state-supported pre-K program [in Tennessee]…Data through sixth grade from state education records showed that the children randomly assigned to attend pre-K had lower state achievement test scores in third through sixth grades than control children, with the strongest negative effects in sixth grade. A negative effect was also found for disciplinary infractions, attendance, and receipt of special education services[.]

That's pretty bad! In fact, it may just be that this particular program wasn't very good. A 2018 study — also Lipsey et al., but with different coauthors — also found

harmful results from the same Tennessee program.

(Side note: As with minimum wage, immigration, and a lot of other long-running empirical debates, you start to see the same names on a lot of the papers saying pre-K is good, and a set of different names on the papers saying that pre-K is bad. In some extreme cases, one entire side of the debate can be supported by a single influential researcher using highly questionable methods. So you have to watch out for that! I don't *think* that's what's happening in this case, but it's good to be on the lookout.)

Another example is Quebec's universal child care program. Baker, Gruber & Milligan (2019) find that this program had lasting negative effects on outcomes like health, crime rates, and life satisfaction.

Second, even when studies do find positive effects, these effects sometimes disappear over time. And the **cognitive and academic benefits** tend to disappear much faster than other benefits like health and achievement. For example:

1. Pages et al. (2019) follow the Head Start students studied by Deming (2009), and find that all the benefits disappear by adulthood, leaving no lasting positive outcome they could find.

2. Gibbs, Ludwig, & Miller (2011) analyze a program that randomly assigned kids to Head Start, and find that the academic benefits disappear by first grade. Bitler, Hoynes, & Domina (2014) look at the same evidence and find the same thing.

3. Kline & Walters (2016) also analyze Head Start using that same randomized experiment, and they find that although cognitive benefits fade, adult earnings do get a boost.

4. Bartik & Hershbein (2018) look at the effects of adding pre-K to public schools. They find no overall benefit on test scores, grade retention, or other academic outcomes, though they do find benefits for majority-Black school districts.

And so on, and so forth. A 2013 review paper by Duncan & Magnuson, though slightly out of date, seems to sum up the general findings thus:

> Many early childhood education programs appear to boost cognitive ability and early school achievement in the short run. However, most of them show smaller impacts than those generated by the best-known programs, and their cognitive

> impacts largely disappear within a few years. Despite this fade-out, long-run follow-ups from a handful of well-known programs show lasting positive effects on such outcomes as greater educational attainment, higher earnings, and lower rates of crime.

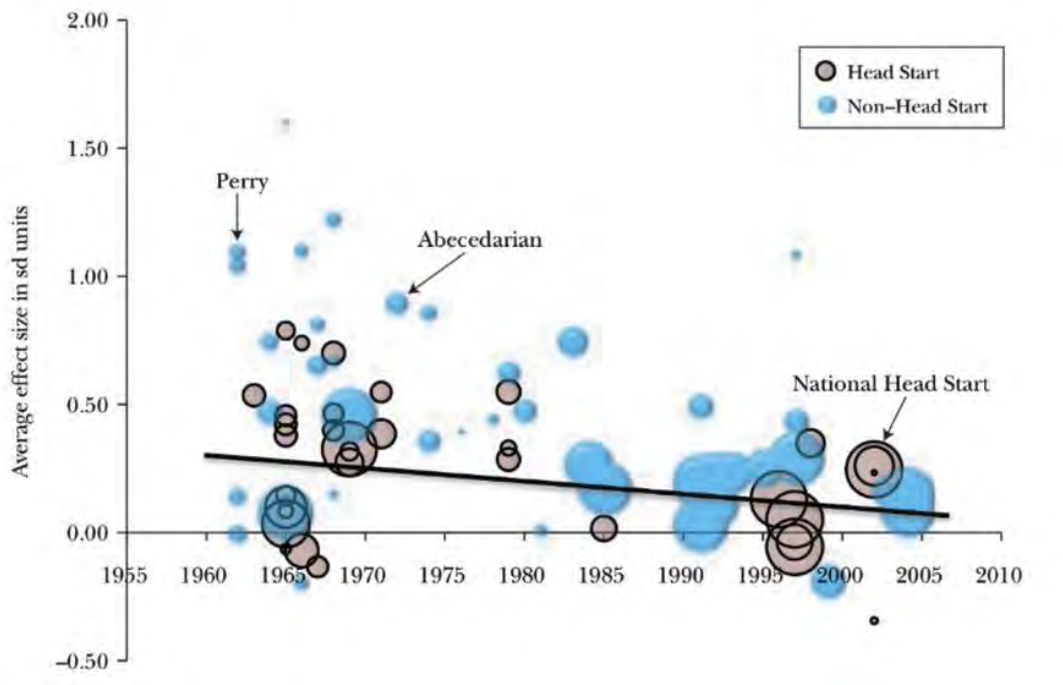
So cognitive benefits tend to fade, but social and psychological benefits often last — as long as the programs are good ones, which not all of them are.

So which programs are good ones? Here we run into another problem: As pre-K programs get more and more universal, they seem to be falling in quality. Pre-K has problems scaling up.

The scaling problem

Duncan & Magnuson's paper also has this very interesting graph of findings over time:

Figure 2
Average Impact of Early Child Care Programs at End of Treatment
(standard deviation units)



What this shows is that papers have been finding less and less of an immediate impact of pre-K programs as time goes on (to say nothing of the lasting impact). It also shows that more recent analyses tend to have larger sample sizes (roughly corresponding to the size of the bubbles).

That, plus Duncan & Magnuson's finding that the top programs — the ABC and Perry Preschool — outperform the others by quite a lot, suggests a story about why programs might be getting less effective. It might be **a scaling issue**.

A persistent problem in economics is that small interventions that turn out to be very effective usually become ineffective when you scale them up. Jason Kerwin has a great blog post about this, called "Nothing Scales". He exaggerates a bit (a few things do scale), but hear him out:

> Good empirical social science almost always focuses on estimating a causal relationship…[but that relationship] still potentially differs for every person, and at every point in time…
>
> Treatment effect heterogeneity…helps explain why the development literature is littered with failed attempts to scale interventions up or run them in different contexts. Growth mindset did nothing when scaled up in Argentina. Running the "Jamaican Model" of home visits to promote child development at large scale yields far smaller effects than the original study. The list goes on and on…
>
> Scaling up a program requires running it on *new* people who may have *different* treatment effects. And the finding, again and again, is that this is really hard to do well. Take the "Sugar Daddies" HIV-prevention intervention, which worked in Kenya, for example. It was much less effective in Botswana, a context where HIV treatment is more accessible and sugar daddies come from different age ranges.** Treatment effects may also vary within person over time: scaling up the "No Lean Season" intervention involved doing it again later on, and one theory for why it didn't work is that the year they tried it again was marked by extreme floods…
>
> [W]e rarely actually run the original intervention at larger scale. Instead, the tendency is to water it down, which can make things significantly less effective.

A 2017 Brookings report on the evidence on pre-K education comes to a similar conclusion. The authors write:

> Convincing evidence on the longer-term impacts of scaled-up pre-k programs…is sparse…The evidence that does exist often shows that pre-k-induced improvements in learning are detectable during elementary school, but studies also reveal null or negative longer-term impacts for some programs…

> Transforming a small, well-funded and closely monitored program to a large-scale program offered to thousands of children is not easy. The challenges of scale-up are illustrated by the national Head Start program, for which consistently strong and enduring impacts have been elusive…Some scaled-up public preschool programs have produced smaller impacts on children's cognitive abilities than have been found for small-scale programs[.]

Universal pre-K, of the type Biden would create, is the most scaled-up program of all. So given the difficulties with scaling pre-K up from successful small efforts like the ABC and Perry Preschool programs, we should expect that Biden's program would have no lasting academic benefit, and perhaps a small lasting social/psychological benefit, if any.

But maybe that's OK, because even at large scales, pre-K has another big benefit: It's a form of day care.

Universal pre-K is day care

Anyone who had kids at home during Covid will keenly understand that schools do more than just teach kids stuff; they also **take the kids off of their parents' hands**. Taking care of kids at home requires a massive about of (unpaid) labor. And it's very inefficient labor, too — schools have economies of scale, where each teacher supervises a dozen or more kids. An advanced economy is based on specialization, and schools are the main institution we have developed to specialize in the daily supervision of children.

That means pre-K isn't just about the kids and their education; it's about the parents and their jobs. In a 2015 meta-analysis and literature review paper, Elango, Garcia, Heckman & Hojman write:

> Gains in parental income are an important component of the returns to [pre-K programs] because the program provided care for up to nine hours a day, thus enabling mothers to increase their labor supply. Early childhood education has effects not only on the children, but also on the economic lives of their families. It is a form of enriched childcare that enables mothers to work and to provide additional resources for disadvantaged families.

The studies they review generally find that pre-K programs lead mothers (who are more likely to provide unpaid child care in the absence of affordable day care) to

work more. Most other studies find this as well. (There are a few studies that don't, but they seem to be rare.)

In fact, it's even possible that increased family income is a major reason that pre-K programs have the positive long-term effects that they do have! Even if pre-K doesn't teach students reading or math any better than their parents or other family members would have taught them at home, the fact that the programs are provided by the government allows the parents to go work and earn more and create a better life for their kids outside of school.

"Pre-K as day care" also gives us another good hypothesis as to *why* a lot of scaled-up programs have such weak effects, and why the effects seem to be stronger for disadvantaged kids. It's about the alternatives. Kids who don't go to pre-K don't just get frozen in some kind of stasis field for the whole day. If they're from rich families, their parents might enroll them in fancy day care centers or hire fancy nannies or tutors to take care of them — or their rich, well-educated parents might be spending hours of time with them, reading to them and teaching them math, etc. So even if pre-K does teach kids a lot of useful stuff, the alternative private day care centers, nannies, or educated parents would teach them *even more stuff* if they didn't go to pre-K.

But if kids from less affluent families, their parents can't afford private day care or nannies, so they'll be taken care of either by their own parents or by other family members. (If they do go to day care, it's probably a cheap low-quality charity-funded sort.) This will not be an environment as conducive to learning, socialization, and healthy personal growth, especially because low-income parents are also not likely to have much education themselves.

So when you give poor people day care, their kids tend to benefit relative to their alternatives. And when you give middle-class people cheap day care and they let their kid take the slight hit to their academics in exchange for being able to add a second income, maybe the kid takes a small temporary academic hit relative to their alternatives, but the family — and ultimately the kid — benefits a bit overall. And when you force rich parents to send their kids to day care, maybe they just get hurt relative to their own alternative. In the papers that study scaled-up programs, we could be seeing a mix of all of these effects.

Even Heckman himself recognizes that this is an argument against universal pre-K. In

his review paper with Elango et al., they write:

> The economic case for universal early childhood programs is weak. The case often made for them is political in nature. Universality is sometimes sought to avoid stigma and to promote inclusion. The costs of offering such programs are diminished because, at the levels of quality usually proposed, the affluent are much less likely to use them. The programs discussed in this paper are less attractive to them because they have better alternatives.

So what do we do? There are lots of kids who will probably be hurt by forcing them into universal pre-K programs. The right thing to do seems to be to make pre-K free but not universal. (And although it's controversial, we should also think about giving some cash benefits to parents who do choose to stay at home with the kids.)

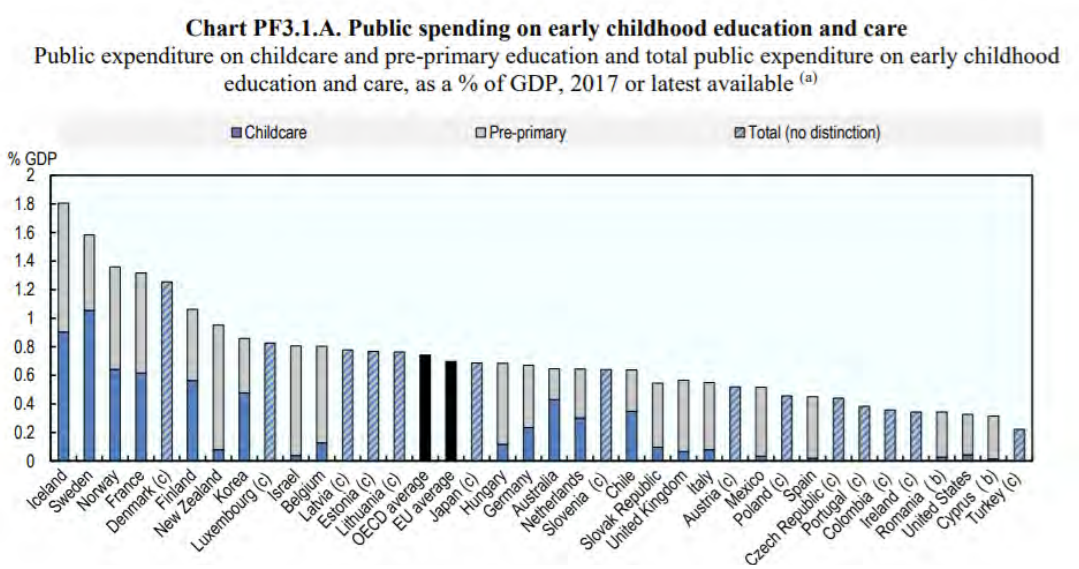
Free day care is a pretty good idea

Giving every parent the *option* of enrolling their kids in a free, government-run pre-K program (i.e., day care center) sounds like a pretty good idea. It won't force kids to enroll in pre-K if their parents decide their alternatives are better. But it would relieve any parent of the financial burden of paying for child care, if they so choose. That would allow more poor and working-class parents to go into the workforce, earning more money to feed and educate and help their families. And it would increase national output in the bargain, since day care leverages those all-important economies of scale (and in fact, measured output would go up by even more than actual output, since unpaid parenting labor isn't counted in GDP).

This plan has an element of redistribution. Free pre-K programs will be paid for by taxes. Taxes fall more on people who earn more money. So there's a subsidy here from the rich taxpayers — especially those who don't put their kids in the government day-care centers — to poorer people, who will be much more likely to use the centers.

And *that's fine*. In America we profess to believe in equality of opportunity. Well, what creates more *inequality* of opportunity than the fact that some little kids are born to parents who can afford expensive nannies to teach those kids how to read and write and do math, while other kids' parents can't afford anything of the kind? Free tax-funded government-provided day care centers won't fully level that playing field — not by a long shot — but they're a heck of a good start.

In fact, spending more on child care would bring us closer to the international average. Currently, we're way behind:



So no, pre-K is probably not a stellar education for most kids — at least, not much better than the alternative, unless you're a poor kid. When you scale it up to the level of a universal program, it's really just government-funded day care.

But government-funded day care sounds like a pretty good deal.