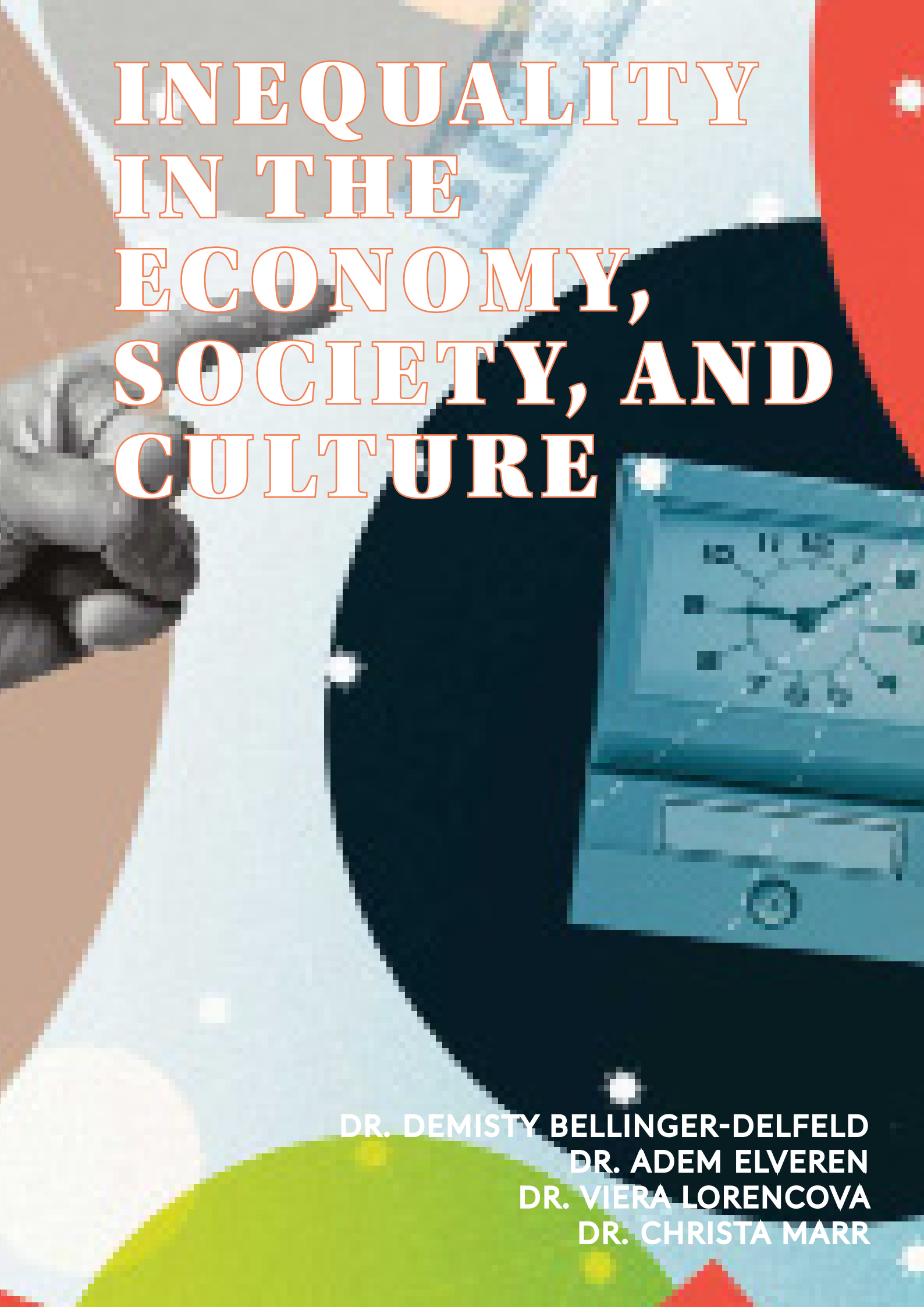
INEQUALITY IN THE ECONOMY, SOCIETY, AND CULTURE



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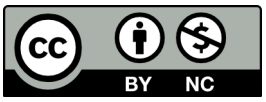
"Using Data to Address the Health Challenges of the Future" was funded by the Center for Faculty Scholarship at Fitchburg State University for the first annual CFS Spring Colloquium. Funding for the collquium supports faculty working across disciplinary lines to present and write on a shared topic.



Contents

GETTING YOUR WORDS WORTH: CREATIVE WRITING MAJORS AND WORKING-CLASS STUDENTS

Introduction: Why This Topic?

Here's an unpopular thought among the MFA crowd: you don't need a degree to write. MFAs and BFAs (or BAs) in creative writing are relatively new, but people have been writing for centuries. Degrees in creative writing cost time and money, both precious commodities to anyone, but especially to the working-class student.

Here's another ugly truth (or beautiful; it's all relative): some of my favorite living writers have degrees in other fields. My friend Jenna Le, one of the best poets I know, is a physician. Tyrese Coleman practices law. Chaya Bhuvaneswar is a psychiatrist. Nicole Dennis-Benn has degrees in the sciences with a master's in public health, a career in which she now works (Mullins). Dead writers, too, enjoyed professional lives outside of writing: William Carlos Williams was a medical doctor. He wrote his most famous poem, "The Red Wheelbarrow," while making a house call. Frank O'Hara also kept his day job as a museum clerk well into his fame (NYPL Day Jobs).

I did not want to go to college. I did poorly in high school and was done with formal education. As far as I was concerned, I was learning enough about writing through writing, reading, and attending author events. I was satisfied (though, admittedly, not very happy) working retail and writing on my off time. Even then, I knew that I didn't need a degree to become a writer. I pushed off going to college by telling my parents I was taking a year off. Though when the time came to apply to school (I don't know who told them it was time), they told me I'd be applying for school or finding a new place to live. I chose the former.

I didn't know what to major in. I didn't know where to apply. The one school that I did apply to (and hoped I wouldn't get into) had a professional writing focus for English majors, so that's what I chose. Not creative writing, but I didn't know any better, and many of the courses were creative writing courses. And once I got to college, I didn't want to leave! My professors suggested that I attend an MFA program, so began my career in academia (sort of) and my serious study of the art of writing.

My parents were an anomaly. I want to make that clear: our family didn't know much about traditional college and family members who had experience before in higher ed went to trade schools or Job Corps. I was first generation. And like me, many first-gen students are "disproportionately from low-income families

and members of disadvantaged minority groups in addition to facing a unique set of educational challenges" (Trejo). Because of the precarious financial position of first-t-generation students who are often working-class students, these students tend to choose majors that are less risk-averse and guarantee long-term employment post-graduation (Trejo). In his study "An Economic Analysis of First-Genera . . ," Sam Trejo found that "first-generation students prefer the following majors: Computer Science & Math, Education, Engineering, Health, Psychology & Social Work, and Social Science" and tend to stay away from the arts, liberal arts, and the humanities. Trejo says that "majors groups that first-generation students prefer tended to have low unemployment, high average wages, and a high occupational concentration" and if you're trying to work your way up the socio-economic ladder, this makes sense. The National Center for Education Statistics states in its study, "First-Generation Students in Postsecondary Education," that first-generation students have a harder time choosing a major and that those who do choose, most of these students chose business and social sciences (Chen v).

"DOES THIS MEAN THAT WE SHOULD STEER WORKING CLASS STUDENTS AWAY FROM CREATIVE WRITING MAJORS OR THE HUMANITIES IN GENERAL? IT'S A QUESTION STEEPED IN CLASS PRIVILEGE WHERE ONLY THE AFFLUENT STUDENTS CAN STUDY ART OR MATTERS OF THE MIND."

So why did my parents allow me to major in English with a professional writing concentration? We didn't know better! Most working-class and working-poor families steer their kids away from the arts and humanities, and writing is one of those disciplines that straddles both of these. Does this mean that we should steer working class students away from creative writing majors or the humanities in general? I came to this question because colleagues often challenge the worth of the humanities which, in turn, gives weight to the argument that liberal arts degrees are not a good return on investment. It's an annoying question-–one that my friends and I, who studied English like me, or philosophy, or history, or any of the subjects of the mind—found bothersome and tiresome when we were in college. Of course, back then, we weren't going to be tens of thousands of dollars in debt due to tuition and fees. And it's a question steeped in class privilege where only affluent students can study art or matters of the mind.

I teach at a university that regularly makes it as a "best college for social mobility" on the *US News & World Report*'s notorious college ranking. Our students are often working class, and/or breadwinners of their families, and/or first generation to go to school, and/or first generation American. Our students attend college to get better career opportunities. As someone who has a career in English studies, I get understandably worried when advisees or non-majors who enjoy writing fiction or poetry come to me asking about internships or careers in writing and publishing. Regardless of my lofty view of higher education, I understand that most of our students' end goal is gainful employment.

Here, I want to explore the worth of a creative writing degree and propose that creative writing and all liberal arts degrees teach critical thinking and transferable skills, two assets important in any career. I'm coming to this topic with the following initial questions: Do you really need a degree in writing to write? Is it irresponsible to encourage low-income students to study writing? And what is the

modern purpose of a liberal arts degree? Of course, it should be obvious that this does not address only writing, but since that is my discipline, I will use the major as an ur-major in this argument.

To try to answer these questions and get to the value of creative writing education, I will look at assumptions versus reality of economic outcomes of majors, democratization to vocationalism of education, transferable skills or ways to use your education beyond the classroom, art for art's sake (and education for education's sake). Finally, I offer possible solutions which, I know, is not an exhaustive list of answers nor a panacea for the seemingly perpetual death of the literature/history/arts/philosophy degree.

Money-Making STEM and Money-Losing Arts: Assumptions v. Reality

"Meet the Parents Who Won't Let Their Children Study Literature," Steven Pearlstein's article asks, and he goes over how many of his students at George Mason University were not studying literature because of their parents. Though anecdotal, he says he found it "shocking that some of the brightest students in Virginia had been misled—by parents, the media, politicians and, alas, each other—into thinking that choosing English or history as a major would doom them to lives as impecunious schoolteachers" (Pearlstein). Pearlstein quotes Debra Humphreys, a vice president at the Association of American Colleges and Universities, as saying that many colleges reported "parental pressure against the liberal arts" and that at many elite schools, students have more than one major so that they can study what they want as what their parents want.

Maybe the major has nothing to do with it. "It would be a mistake, of course, to attribute salary differences solely, or even primarily, to the choice of major. One study by economists at Yale found that half of the premium earned by STEM majors can be explained not by what they learned in college but by the greater intelligence, diligence and other characteristics" (Pearlstein). My own anecdotal history involves conversations with parents, students, my friends, my landlord before I bought a house, all asking me what can my students hope to do upon graduation. If the profession's title isn't in the major, then what is that profession? If you have a nursing major, then you can expect to be a nurse. If you are an engineering major, you can expect to be an engineer. But what can you expect to be if you get an English or history degree?

What about a business degree?

It seems that since the profession isn't as clear in the name of the field of study, people unpracticed in education have a hard time seeing what is possible with certain degrees. Furthermore, positions such as nursing and police officers are obviously essential to society. Though liberal arts majors may be essential, too, their essentiality is not as obvious to everyone. But essentiality does not equate to monetary worth, so my argument here may be moot for now. The real question here is how much graduates of each degree make.

In their report "The Economic Value of College Majors," Carnevale, Cheah, and Hanson look at the "interquartile range of wages, or . . .the middle half" of

earning potential (5). They do state that this information is inadequate because "one out of every three college graduates goes on to earn a graduate degree" (5), and in doing so, the college degree is considered a "stepping-stone" for many majors (Carnevale et al 5).

In their findings on college majors, Carnevale, Cheah, and Hanson's claims about wages that the average salary for graduates is $61,000, where engineers on average earn a bit more at $83,000 and education the lowest at $45,000 (5). But within those majors, there are variances depending on specializations. The examples they offer, "petroleum engineering majors are paid the most and early childhood education majors are paid the least," where petroleum engineers "earn an average annual salary of $136,000 over the course of their careers, while those who majored in early childhood education earn $39,000" (5). And, surprisingly, business majors "vary the most," from $43,000 to $98,000 (5). Although there is nothing wrong with any of these college majors, it challenges the assumption that specific fields of study offer as much economic certainty many may assume.

A MAJOR DOES NOT DICTATE THE REST OF ONE'S CAREER; A LIBERAL ARTS EDUCATION AFFORDS STUDENTS THE CHANCE TO APPLY THEIR ABILITY TO LEARN AND GROWN ON THEIR OWN.

The assumption lies with the field of study—you excel financially if you excel in particular majors. However, there are outliers in every field; the numbers we see at the US Bureau of Labor's National Occupational Employment and Wage Estimates, but these are medians and means. Because of "the complex relationships between college and careers, some college graduates who major in less lucrative fields of study earn more than those in typically high-paying majors" (Carnevale 4), and the reasons for these outliers are as varied as students. For instance, as Carnevale, Cheah, and Hanson notes, "education majors have the lowest wages while engineering majors have the highest wages. But the top 25 percent of education majors earn more than the bottom 25 percent of engineering majors" (4). Just because the field yields certain earnings does not mean that graduates in that major will stick to that field or would earn the average. Carnevale et al state plainly that a major does not dictate the rest of one's career; a liberal arts education affords students the chance to apply their ability to learn and grow on their own.

"The Economic Value of College Majors" states that 8.6% of all students major in the humanities and liberal arts, which is where creative writing programs are usually housed, and 41.4% of those majors continue on to graduate school (Carnevale et al 91). Of the students majoring in these fields, "English majors comprise the largest share of humanities and liberal arts majors at 29 percent" (Carnevale et al 91). For parents and students who are worried about the earning power of their English studies student, they should be appeased that the median annual wage of English majors was just a thousand dollars less than that of history majors, at $53,000. History majors still clock it in at the highest overall if they earn a graduate degree, but English is not too far behind.

I was a horrible high school student and did not have anyone in my life who attended a four-year college and those I know who went on after high school at all, were folks who got associate degrees or one and two-year trade schools. I picked my major based on my love of reading and writing, and back then, I thought writing was something I was somewhat good at (jury's still out on that one). Again, my

family knew nothing about college or the purpose of college; we only knew that going to college increases one's chances at economic success. How do other first-generation and/or lower income students choose their majors?

"Writing serves as a gatekeeper for entrance and continued success in college and in the workplace," Jessica Singer Early states in her article "'Mi'ja, You Should be a Writer': Latino Parental Support of Their First-Generation Children" (278). Many high school students must complete entrance essays as well as "resumes, the writing component of the SAT, and freshmen writing requirements" which, according to Early's sources, "are often barriers for minority students" (Early 278).

Contrary to some assumptions, parents of first gen students, low-income parents, and parents of color do want their children to succeed in education, and studies found that students whose "parents set firm limits" tend to do well in school (Early 278).

"First-Generation Students in Postsecondary Education: A Look at Their College Transcripts," a study in the National Center for Education Statistics, Dr. Xianglei Chen says:

> Many factors are associated with a student's choice of major. Weak academic preparation, for example, may deter first-generation students from choosing certain 'high-skill' fields, such as mathematics and science. Perceived low-earning potential may also deter them from entering such fields as humanities, arts, and social sciences (Montmarquette, Cannings, and Mahseredjian 2002). (V)

High school grades determine the possibility of majoring in the STEM fields, which include engineering, but "perceived low-earning potential" also informs low-income students choices in major, too. These perceptions on arts, humanities, and soft science degrees, and limitations due to lack of college preparations for these students restrict their choices in college.

Economist Sam Trejo found that first-generation students' status and financial standing had bearing on their major selection. Using a multinomial logit model, his research shows that "in addition to first-generation status, family income, ability, race, and gender all appear to be significantly related to an individual's college major selection" (Trejo). His model shows that first-generation students prefer occupational majors and eschew "Arts, Biology & Life Sciences, Business, Communication, and Humanities & Liberal Arts" (Trejo). First-generation students prefer majors with "low unemployment, high average wages, and a high occupational concentration" and that they choose majors which have clear "career--paths" (Trejo). Additionally, "these differences exist even after controlling for sex, race, ability, and family income. Given that first-generation students are disproportionately from low-income families, this behavior is likely to contribute to the reduction of economic inequality over the long run" (Trejo).

Such restrictions hamstring disadvantaged students further during their college career. Chen looked at first-generation student academic success by major and found some interesting trends:

> students with the highest rate of bachelor's degree completion included those who had majored in education/library science/social work (72

> percent), social sciences/journalism/communications (67 percent), and mathematics and science (66 percent). Business and health sciences/services majors tended to lag behind (32 percent), but they were more likely than students with other majors (except for human/protective services/vocational fields) to earn a certificate. (16)

Of course, we cannot speculate what the graduation rate would have been if more of these students majored in the humanities or arts, but these numbers offer a quantitative perspective on outcomes of first-generation students in these majors. Though the practice is implicit, first generation and low-income students from kindergarten on are pushed into technical or vocational fields, and "socioeconomically disenfranchised students fortunate enough to be admitted to postsecondary institutions. . .face structural obstacles, including additional tracking away from programs, courses, and pedagogies where critical thinking is emphasized." This creates a duality in education: that for the affluent and that for the working class.

"THOUGH THE PRACTICE IS IMPLICIT, FIRST GENERATION AND LOW-INCOME STUDENTS FROM KINDERGARTEN ON ARE PUSHED INTO TECHNICAL OR VOCATIONAL FIELDS."

Lastly on the comparison of college majors and income outcomes, any college degree will give graduates better economic chances. The unemployment rate for college graduates is half that of those with only a high school diploma and "on an annual basis, bachelor's degree holders earn about $32,000 more than those whose highest degree is a high school diploma" (Edelson). Though making more is not a guarantee—about 16% of high school grads make more than half of college grad workers—it does make it more likely to succeed financially. Even if you "[control] for key socio-demographic variables that influence earnings and the probability of college completion, the differences in lifetime earnings by educational attainment are reduced, but still substantial" ("Research Summary: Education and Lifetime Earnings").

Democratization to Vocationalism

What is the purpose of higher education in America? Is it to train students for careers or is it to create a more well-rounded citizenry? Even considering early America, the reasons are rather diverse. The early colonists looked to education to instill moral ideals and train future clergymen (Snyder 63). Harvard University, established in 1636, to "prepare ministers" (Snyder 63). The push for secular universities came around the Revolutionary War era, with Thomas Jefferson, who believed that the best protection from corruption and tyranny "would be, to illuminate, as far as practicable, the minds of the people at large, and more especially to give them knowledge of those facts" (79. A Bill for the More General Diffusion of Knowledge). Jefferson wanted a national university system, which never came to be, and "Benjamin Franklin was among the first prominent Americans to advocate higher education without religious control" (Snyder 63).

Normal schools, or teaching training schools, came about in the early 1800s (Snyder), the first one being founded in Vermont. The university where I teach, Fitchburg State University, "was established in 1894, it was known as the State

Normal School in Fitchburg, and the sole curriculum was a two-year teacher--training program for women" ("History of Fitchburg State") and the school where I got my bachelor's degree, the University of Wisconsin-Platteville, was founded in 1866 as the first normal school in Wisconsin ("About UW-Platteville").

Beyond teacher education, colleges didn't train students for careers until much later. In fact, "in the early 19th century was characterized by heavy emphasis on the classics" and students were expected to know Greek and Latin prior to matriculation, as well as mathematics up to algebra (Snyder 64). Potential teachers and the wealthy populated college classrooms in the colonies and the early United States.

Today, I am sure that people could argue that education is there to instill critical thinking skills and train students for particular careers and trades. One could argue that it depends on which side your politics lie. But if we are limiting students with fewer economic means the option of following their dreams, are we serving as gatekeepers of who can be thinkers and who must be workers?

II FOCUSING ON PROFESSIONALIZATION MAINTAINS CLASSIST SEPARATION IN EDUCATION, FORCING THE WORKING CLASS INTO FIELDS OF TRAINING INSTEAD OF CRITICAL THINKING. II

In their article "Critical Thinking Versus Vocationalism: A Matter of Class?" Carver and Harrison, both of Ohio University, present the argument that as "colleges and universities are being criticized for failing to inculcate critical thinking skills, there is rising demand for expanded access to higher education as a vehicle for class mobility" and that "recent research suggests that it actually exacerbates class inequality by replicating the marginalization low-income students experience in the K-12 system" (283). Their thesis is that "issues of class and vocationalism are inseparable and that they must be analyzed as interconnected phenomena in order to fully understand how higher education can serve as a meaningful corrective to class inequality," and they question the "binary" of critical thinking and vocationalism (283). They very plainly challenge the idea of college as a means to job training and champion the idea of education for the sake of itself. Early in their paper, they imply that focusing on professionalization maintains classist separation in education, forcing the working class into fields of training instead of critical thinking.

We may have lost sight on the purpose of education and of the university. Carver and Harrison argue, among other things, that education's purpose in democracy is lost when schools are used as proving grounds for industry. And that hyper-focus on job training in higher education, from Obama's free or affordable community college to the push of STEM fields, forces a wider class division, or as postured in Carver and Harrison, "the current vocationalism rhetoric often contains a subtext that sounds dangerously close to proposing a two-tiered education system based on class" (287).

Carver and Harrison define liberal arts, essentially, as a "democratic education," noting the importance for "democratic societies to produce citizens capable of critically analyzing information" and stating that "these qualities allow for the reflection, debate, and conflict resolution needed for the complex

self-governance of a widely diverse population" (284). They stress that critical thinking protects against "attacks on the democratic values of equality,

diversity, and self-determination" and, in turn, authoritarianism (Carver and Harrison 285), harkening back to Jeffersonian principles of education against the possibility of tyranny.

Critical thinking leads to creativity; furthermore, a lack of critical thinking and creation may discourage ethical reasoning, leading to unresponsible creation, or as argued by Carver and Harrison, "The postmodern critique of the modern ethos holds that an instrumentalized use of knowledge unleashes human rationality from its ethical moorings and has resulted in humankind teetering on the edge of nuclear/ecological annihilation" (286). Maybe "nuclear" is too extreme? Ecological not so much, if we consider the present inaction towards climate change. Or, if we deem our reaction to public health and responsibility or to "fake news," that could offer some credence to their argument.

Delbanco, in his *Chronicle of Higher Ed* piece "College at Risk," says both sides of the proverbial American political aisle agree that our colleges are not preparing students for the workforce. He calls such a view of college "an instrumental view of education," where what students learn should be "marketable skills." He states that this view is "limited" and "puts at risk America's most distinctive contribution to the history and, we should hope, to the future of higher education," giving pretty much the same argument Carver and Harrison does in their study, albeit briefer and with less direct evidence. Still, his argument is warranted, looking at the history of education from ancient Greece to the present day, seeing the role of college as a place where young people (men, really) found themselves.

Since its inception, American education was to be democratic and inclusive, first of all boys and young men (color, of course, was a different matter), then, through "state colleges. . . land-grant colleges created. . . during the Civil War" and also through "the GI Bill, the 'California plan' (a tiered system designed to provide virtually universal postsecondary education), the inclusion of women and minorities. . . , the growth of community colleges, and the adoption of 'need-based' financial-aid policies" (Delbanco).

In his article "7 Major Misperceptions About the Liberal Arts," Sanford J. Ungar, journalist and professor, challenges the pipeline to paycheck idea of college. He says that "career education" is shortsighted and cannot prepare students for jobs that don't yet exist (Unger A40). He also cites the Association of American Colleges and Universities' survey that found "more than three-quarters of our nation's employers recommend that collegebound students pursue a 'liberal education'" and that "89 percent said they were looking for more emphasis on 'the ability to effectively communicate orally and in writing,' and almost as many urged the development of better 'critical thinking and analytical reasoning skills'" (Unger A40).

One of the "misperceptions" Unger notes is that the liberal arts are not for low-income or first-generation students. He believes, as I do, that this is "condescending to imply" such students cannot understand or benefit from the liberal arts and that "rich folks will do the important thinking, and the lower classes will simply carry out their ideas. That is just a form of prejudice and cannot be supported

intellectually" (Unger A40). By relegating first-generation and/or economically disadvantaged students into trades or career-based degrees, we are denying a class of people a life of the mind and opportunities for creative careers and fulfilling lives.

Ultimately, there is nothing wrong with students studying career-based disciplines, such as nursing or business, or anything in STEM. Indeed, many students are realizing their dreams of becoming a nurse or an entrepreneur. The problem is assuming that majors in the humanities and arts limit students' futures and are only for the well-to-do.

Concurrently, we cannot ignore that many students are in college to get a leg up in their careers; it would be irresponsible to do so. Even in the humanities and the arts, we should prepare our students for entering the workforce with viable skills and the ability to educate themselves in a variety of positions.

Transferable Skills, or But What Can You Do with a Creative Writing Degree?

We have to be honest and admit that most creative writing programs—mine included—do not teach students how to translate their transferable skills. What students learn in a creative writing class or any humanities or arts class can be applied to other academic and professional programs; this is part of a liberal arts education. It is not that students are not learning transferable skills; it's that we are not teaching them. To look at this closely, it will behoove us to see how some scholars interpret the worth of creative writing within and outside of the workshop.

In a short *New York Times Book Review* piece, novelist Benjamin Markovits recounts a time when a literary agent came to his master's level creative writing class. The agent said that "10 percent of her authors made 10,000 pounds (or about $12,550) a year from their writing," which is about minimum wage in the UK (15).

Before I go any further, I want to explain what happens in most creative writing classes, or workshops: students share a piece of writing with the class, usually prior to a class meeting date, and that piece is critiqued aloud and on paper by their peers and their professor or workshop leader. Students read their peer's work and during a half hour or an hour, parse through the material sussing out gems and duds. The goal is to help the writer improve their piece. In some workshops, students must go through a thorough revision process, where they take into account comments they received on their work. "A roomful of students discussing someone else's prose don't add material — they take it away, and so the general tendency of most workshops. . . is to pare back the language and the story, which produces a kind of polish" (Markovits 15).

Cathy Day makes up an imaginary student, who is a composite of many students, in her article "The Magic Building Where English Majors Work: Making Sense of Creative Writing's Job Problem," in which she answers an inquiring student's questions about the job prospects of a creative writing major. She talks about the famine of academic posts in creative writing or English programs and

how the internet democratizes publishing in ways that reduces the need of editors and others who work in publishing. One of the jobs she mentioned in editing is not at a publishing house, but at a welding company (this resonated with me because my first editing job was at an insurance company!).

Day also talks about professional or tech degrees that train students to do one job. She says her brother went through such a program. He got an engineering degree and found a job in his field, but lost his job in the 2008 recession and couldn't find another position in his field. He had trouble discovering what else he could do with that job.

What are transferable skills and when should we teach them? In his article "Practical Art: On Teaching the Business of Creative Writing," Nick Ripatrazone says that "Creative writing should be taught as an art, and as a business. A creative writing program that only includes the former can unwittingly reinforce romantic stereotypes of writing." He says that poetry "doesn't pay the bills" and that is the "inside joke of creative writing programs in America. We know creative writing doesn't make money, and yet we continue to graduate talented writers with no business acumen." I understand this concern; I try to teach students what I know of the publishing business on both sides of the metaphorical gate, and I do tell them—over and over again—that most creative writers don't make a living from their work. However, I fear that what I tell them is not enough. To be clear, Ripatrazone does not say that writing professors mislead their students or mean their students harm; he only says that "some self-reflection is in order" regarding post-graduation, for graduate and undergraduate students in the field.

» Part of preparing students for the potential of the writing world, either as a writer or someone in publishing, is to show them writers who are working now. Show students the editing process, including feedback from editors. Show them the different jobs in writing. «

Part of preparing students for the potential of the writing world, either as a writer or someone in publishing, is to show them writers who are working now. Show students the editing process, including feedback from editors. Show them the different jobs in writing. "Writing students need to see their teachers as working writers, and to see publication as a meticulous, collaborative, and often slow process" (Ripatrazone). This way, students will know that if they work in the writing or editing field, that process work is important and is largely what makes a finished product.

I have colleagues in other fields who complain that process work is graded in English writing classes. But in grading that work—the drafts, the peer reviews, the revision, and the rewriting—we are preparing students how to work as editors, readers and screeners, reviewers, and writers. We are showing eventual writers that a first draft is not the last draft, and that only the first draft is written alone (sometimes), whereas subsequent drafts are often collaborations. Also, depending on the field in which the writer is composing, their work may be changed considerably to match the style of the publication.

Ripatrazone says that we have to tell students how much we are paid for our writing. I am very candid with my students about the money I receive and, more often, don't receive, for my work. I tell them that it wasn't until well into my publishing and teaching career when I actually started earning money for my work.

Seriously, it was so exciting to get ten dollars for a poem! I still only get accolades or, if it is in print, physical copies. For one anthology that published many poems, I didn't even get a printed contributor copy; I had to buy one! Of course, they do know that there are some writers who make successful careers as writers, but they are so few.

Students must know how long it takes to get work published. Every once in a while, students at my university do publish in national and international journals, and I am not always an editor of that journal! But this is rare, and the pieces that get published—like most pieces that get published in magazines—are exceptional. Most of us have to wait until we're well into our twenties or thirties for our first publication. And we have to wait a year or two until our second. There are outliers, of course, but this is the course of publishing for most writers.

Rachel Toor talks about the diversity of her students in a short article in the *Chronicle of Higher Education*. In "What I Know about My Students," Toor offers a view of students that could be at any regional state university. "My students have OCD, PTSD, anxiety, diabetes, depression, sleep disorders, eating disorders, hypertension, sexually transmitted diseases, problems with drug and alcohol abuse, and parents, siblings, and children who have problems with drug and alcohol abuse," she lists (Toor 10). She talks about their crimes, their looks, their history of being physically and mentally abused, their time in the service and in war, and their working-class backgrounds. Toor also talks about the students' bad writing habits: "Their sentences have run on and on. They have abused semicolons, neglected commas, and used words that don't exist in English," but she says that they've "crafted images that stay with me for years" and discover points in texts that she has taught often.

Toor also says that her students are often first-generation and are heavily in debt because of their tuition. Many take longer than the expected four years to graduate and many never graduate. But, she ends with, "My colleagues and I… are building citizens who can read and write, think and analyze, ferret out alternative facts, and distinguish real news from fake" (Toor 10).

In his article on the worth of a creative writing degree, Geoff Mills quotes novelist Julia Bell as saying that graduates of the University of London "should have the critical and rhetorical skills to get a job in the creative industries, in education, editing, copywriting." The article discussed other aspects of transferable skills, but did point out that creative writing courses do indeed improve students' writing.

Looking for a concrete example of an English major alumni who uses skills they learned in writing in literature classes, I happened upon Steve Stanzak. Even though he was homeless and, essentially, living in NYU's library, Steve Stanzak studied creative writing. His blog, homelessatnyu.com (no longer active), got the attention of administrators at NYU and got him a room in the residence halls for the remainder of his semester (Arenson). Stanzak, a sophomore at the time his living situation garnered attention not only from NYU officials, but from his campus newspaper and the New York Times, studied creative writing and music and was a successful student with scholarships, but did not have enough money to live. He also said that living in the library would feed his writing need (Arenson).

Curious to know what he was up to now, I looked up Steve Stanzak's bio. He, like so many professional people, is on LinkedIn. He received his BA from NYU, then went on to get an MA in folklore from Indiana University Bloomington and a PhD in folklore, also from Bloomington. Although Steve has worked in publishing at the Indiana University Press as a managing editor, then as a production manager, he now works as a software engineer (production manager may have led to that job). After a few software developer and software engineering jobs, he is now a staff Engineer at Nurx, working on fullstack software.

English students at Fitchburg State University have found careers in publishing and editing, law, education, marketing, and more. Quoted in a rebuttal by William Buckingham, novelist and then newly appointed professor Hanif Kureishi, stated that undergraduate creative writing degrees are "totally worthless" and that most "creative writing students are entirely lacking in talent (Buckingham). Kureishi, the article clarifies, sees writing as an innate talent that cannot be taught. The author disagrees and believes such a statement supports an out for professors of creative writing and subpar writing students.

II Many low-income and first-generation students are also students of color and/or immigrants and first-t-generation American students. To prevent them from following their dreams in the arts is siloing them into tech or profesional fields, adn leaving the work of creating to that of the mostly middle-class or welathy mostly white students. II

As for the dream of becoming a writer, there is nothing wrong with teaching art for art's sake and, sometimes, instilling in students the skills needed to become a successful writer. Creative writing in undergrad can lead to successful publishing careers as writers or behind the scenes, or teaching creative writing themselves (Buckingham). What do students learn in creative writing classes and what do we teach them? "You can't teach people to be Kafka, but you can teach them how to write better" (Markovits 15), and that is what I hope to accomplish in my classes, without worry towards future incomes or lives.

Before he retired, Nicholas Delbanco, a writer and professor who I cited above, is an "author of an innovative idea that set a high bar for creative-writing graduate programs everywhere: Ensure that all students can attend free" (Monaghan A17). Monaghan writers of Delbanco and his idea of a free MFA in creative writing is that "The prospect of large debts keeps away a diverse range of young writers, among them some of the most talented" (A17). Ann Arbor's full-ride for all of its students challenged other universities to cover costs, be it through Tas or scholarships or low-residency programs (Monaghan A17).

On the worth of writing, Delbanco "recommends countering any skepticism about the value of writing programs by noting that professional musicians or dancers would hardly take the stage without intense training" (Monaghan A17).

Finally on the worth of creative writing and arts programs for low-income students, we should remember that many low-income and first-generation students are also students of color and/or immigrant and first-generation American students. To prevent them from following their dreams in the arts is siloing them into tech or professional fields, and leaving the work of creating to that of the mostly middle--class or wealthy mostly white students.

Filmmaker and photographer Sharonda Harris-Marshall notes that Black parents are moved by seeing their children "embrace *Black Panther* [the movie] and its cast of positive characters" and that the question "emerges: how do we get more movies and stories like this" (Harris-Marshall). She believes that we, as Black parents, should encourage our kids to study the arts, and says as much in the title of her blog post "Black Parents: Encourage Your Child to Study the Arts."

Although we need more Black artists, and more venues for black artists, as Harris-Marshall says, in the United States, "a career in the arts is considered unnecessary, unrealistic, and elitist... the truth is that for many people of color, a career in the arts is unobtainable due to finances or a lack of art education" (Harris-Marshall).

If the arts are overwhelmingly white (but what isn't?) and successful careers are far and few in between, why study the arts? Harris-Marshall believes that we do it for the economy. "We all consume content created by artists," she says. She notes the success of *Black Panther*, *Girls Trip*, and *Get Out*. But she also notes arts that don't seem to translate to box office numbers, like basket weaving. To that, she says, "We joke about basketweaving (sic) classes, but have you seen the baskets made by the Gullah in the Lowcountry? That's an art that must be preserved" and talks about other craft arts in various Black communities.

> "When we become artists, we becoe in control of our own stories, our images. No one can tell us our stories don't matter. As we create, we are cementing our place in history. We can influence the next generation to improve and shape stories of their own."

A worth of creative writing—of any arts—is that those who create art can have control of the stories they tell. "When we become artists, we become in control of our own stories, our images. No one can tell us our stories don't matter. As we create, we are cementing our place in history. We can influence the next generation to improve and shape stories of their own (Harris-Marshall). And what is more worthy than that? Of course, this thinking extends to students and creators of all backgrounds.

A Call to Action: How to Sustain and Celebrate the Humanities and Arts

The beautiful thing about poetry is when I present, it does what it's supposed to do. Those delicious moments when the audience gasps in unison shows that your point got across. When your short stories are quoted and shared online, you know you moved someone with your words. Other academics have success with papers and honestly, I haven't gotten there yet and don't know if I ever will. Writing fiction and poetry is just so fun! But I didn't want to leave without offering possibilities of approaching teaching creative writing and other creative fields, and the humanities, along with transferable skills in these courses. I divide these into two sets of goals: reasonable and lofty.

Reasonable

First, I think we should normalize minors. Not only do I think that minors could save programs that are on so many universities' chopping blocks (see the MFA program at Purdue, or many programs on the cutting floor at the University

of Vermont). The ability to write well, to think critically, and to create can all benefit students in any field of study. If not minor, students should be encouraged to take classes outside of their majors for a more, well-rounded education.

Secondly, we can train faculty to contextualize transferable skills. We know from experience, and from what employers desire. For instance, "learning, reasoning, communicating, general problem-solving skills and behavioural skills," "reading and writing," and "knowing how to learn" are all sought-after skills for employees (Carnavale and Smith). The employee website Indeed.com lists communication, eagerness to learn, work ethic, and problem-solving as top soft skills, all of which can be acquired in the creative and liberal arts (Indeed Editorial Team). Boston University includes these skill sets, too, according to the National Assocaitoin of Colleges and Employers, along with the "ability to make decisions. . .plan, organize, and prioritize work. .. obtain and process information: and the "ability to create and/or edit writin reports". . . and "influence others," again, all of which can be found in creative arts and the liberal arts ("Skills and Qualities").

It is not enough to teach these skills in a vacuum; we must demonstrate how these skills can be translated on the job. Right now, we are only teaching Daniel how to wash the classic cars on Karate Kid, but he has yet to learn how to apply that knowledge in a fight!

I propose to address transferable skills, we should consider departmental committees on professionalization, along with other standing committees. Also, we should reach out to alumni often and use the information they give us about how they used what they learned in our classes at work.

Lofty

I am going to end this paper with lofty goals. Some schools have already implemented some of these, but I realize that they are all nearly impossible at a small, regional state institution such as my own. First, get rid of gateway courses in humanities and let students explore. Do students really need to take two first--year writing courses before they take a literature course or a history course? I am not saying that we should do away with first-year writing; indeed, I think we need another semester or two of academic writing, but I think if students are allowed to explore, especially students who haven't declared a major, they would help them appreciate the humanities and arts more.

Second dream goal is to get rid of majors that don't have a job title in its name. Keep nursing, but get rid of biology, for instance. Majoring in the classics or in the humanities as an undergrad seems a bit relegated to educating the elite. Specialization seems more pertinent in post-graduate degrees, especially considering the big resignation and constant job changes that are happening presently. That is a really lofty goal, I know.

Lastly, make college more affordable or free. If students had the time to explore, lollygag, fail, and try again, then they could take classes that they want and really discover themselves in college and figure out how they want to meet the world upon graduation. This means raising taxes, especially on the very rich, and investing more into public education. Let's make Bezos pay for it!

So What?

No college degree or program should be deemed unworthy of study or finance. If we help students realize why they are in college, teach them how to use their transferable skills, and invite them to be a continued part of the college experience by revisiting alumni post-graduation, we will see the worth of any four-year educational program.

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THE EFFECT OF MILITARY SPENDING ON ECONOMIC GROWTH AND INCOME INEQUALITY

Introduction

The purpose of this research is to briefly assess the literature on the impact of military expenditures on the economy, including economic growth, profit rate, and income inequality.[1] High global military spending leads to a massive waste of resources. Despite an initial drop in military spending following the end of the Cold War, global military spending has surged in recent decades as a result of post-Cold War intrastate conflicts. Despite the pandemic, global military spending climbed by 2.6 percent between 2019 and 2020, reaching $1.98 trillion (SIPRI, 2021).

Different schools of economic thought have examined the economic impact of military expenditure. Defense is treated as a public good in the neoclassical framework. In terms of the production possibilities frontier, the state must choose between civil and military expenditures. Similarly, military expenditures may have both positive and negative externalities from a public economics perspective. The state operates rationally, maximizing a certain 'national interest', which is apparently the result of societal agreement. In the neoclassical paradigm, econometric models treat the military sector as a separate sector in the economy (Feder 1983; Ram 1986; Biswas and Ram 1986), or simply include military expenditures in the Cobb-Douglas production function. Additionally, endogenous growth models are used to justify military spending, while game theoretic techniques attempt to explain interstate behavior in terms of conflict and the arms race (Coulomb 2004).

In general, neoclassical approaches to military spending have been critiqued for a variety of reasons (Dunne 2013). The optimization approach is ahistorical, disregards the military's internal role and military interests (e.g., an unrealistic national consensus presumption), and makes unrealistic assumptions about rational actors' extensive information – thereby excluding the uncertainty inherent in international relations – and computational ability in decision making.

By contrast, Keynesian models employ a demand-side approach, with military spending included in total government spending. Military spending, according to the Keynesian view, increases aggregate demand through the multiplier effect, which is the central thesis of Military Keynesianism. That is, if the economy is not at full employment, military expenditure may enhance resource use. The critical problem, however, is how military spending is paid, since the amount to which military spending is crowded out will depend on the method of funding, namely cutbacks in other public expenditures, higher taxes, borrowing, and money supply growth. Keynesian models have been criticized for concentrating only on demand--side concerns. To remedy these inadequacies, some Keynesian researchers insert explicit production functions into their models (Deger and Smith 1983; Deger 1986).

[10] This short review is heavily based on Elveren (2022), "The Political Economy of Militarism," in *The Oxford Handbook of Economic Imperialism* (Eds. Immanuel Ness and Zak Cope), Oxford University Press.

Both neoclassical and Keynesian theories fall short in explaining the economic function of interest groups. In comparison, the Military-Industrial Complex (MIC) theory of military power and conflict explains these phenomena (Dunne 2013; Elveren 2019). The MIC is a symbiotic relationship between the military forces and its affiliated businesses that results in beneficial choices for those in power in the name of 'national security'. Internal pressures are created by the MIC to justify growing military spending even when there is no imminent danger. The MIC hypothesis claims that although military expenditure may have Keynesian positive economic impacts in the short term, it diverts resources away from more productive civilian sectors in the long run, hence reducing the economy's productive potential (Melman 1965, 1970, 1974; Galbraith 1969). Thus, the MIC is the issue for liberals such as Melman and Galbraith. However, militarism, according to Marxist theorists, benefits more than simply arms producers; it is necessary for capitalism. So, for them, Military Keynesianism was expedient due to the limitations of more socially useful Keynesianism (Toporowski 2017).

Why, according to Marxism, is the military sector necessary for capitalism? There are two similar perspectives: Baran and Sweezy's (1966) "underconsumption theory" and Michael Kidron's "permanent arms economy". Contrary to other kinds of government spending, which boost the economy's production potential, the former contends that military spending avoids realization crises by absorbing the surplus in the economy. Baran and Sweezy's reasoning is consistent with Kalecki's view that "the construction of schools, hospitals and even roads is of limited scale" because they "compete with the private sector and reduce the rate of capitalist profits, which obviously has a negative impact on private investment". Therefore, their economic effect "will be weaker in the long run, and beside this, will draw immediate political opposition from monopolies damaged (by such competition)" (Kalecki 1955:580-581). Kalecki concludes that "[a]rmaments play a specific role precisely because they are unproductive" (ibid. 580-581). On the other side, the permanent arms economy theory implies that military expenditure keeps the economy from overheating (Kidron, 1970). These last two points of view demand more explanation, which is what the next section provides. It is against this background that we discuss the impact of military expenditure on three interlinked variables: economic growth, profit rate, and income inequality.

WHY, ACCORDING TO MARXISM, IS THE MILITARY SECTOR NECESSARY FOR CAPITALISM? THERE ARE TWO SIMILAR PERSPECTIVES: THAT MILITARY SPENDING AVOIDS REALIZATION CRISES BY ABSORBING THE SURPLUS IN THE ECONOMY AND THAT MILITARY EXPENDITURE KEEPS THE ECONOMY FROM OVERHEATING.

The Impact of Military Spending on the Economy

There is a substantial literature on the effect of military expenditure on economic growth, which is likely the most popular issue in defense economics, a much smaller body of work on income inequality, and a few studies on the profit rate. Additionally, there is only one empirical research on the link between militarization and financialization (Akçagün and Elveren, 2021) and two on the effect of militarization on gender inequality (Elveren and Moghadam 2019; Elveren, Moghadam and Dudu forthcoming).

The impact of military spending on economic growth

Three types of econometric studies have been conducted to examine the link between military expenditure and economic growth. The first set demonstrates that military expenditure boosts economic growth through stimulating fiscal expansion and aggregate demand. Thus, if there is spare capacity, it increases employment and production. Military expenditure benefits the civilian sector as a result of the spillover impact of research and development. The second group argues that increased military spending reduces economic growth due to resource misallocation. In other words, wasteful military expenditure crowds out productive public and private investment in education and health. Additionally, military spending by arms importers can also worsen that country's balance of payments, which in turn may discourage capital inflows that could have increased GDP (Sandler and Hartley 1995: 202). The third group maintains that military expenditure has no direct association with economic growth.

Since Benoit's pioneering work (1973; 1978) established that military expenditure had a beneficial effect on economic growth, scholars have used a variety of econometric models to examine this link in further detail. Among these are the Feder-Ram model (Feder 1983; Biswas and Ram 1986), the Deger-type model (Deger and Smith 1983; Deger 1986), the endogenous growth model (Barro 1990), the augmented Solow growth model (Mankiw, Romer and Weil 1992), and the new macroeconomic model (Romer 2000; Taylor 2000). According to a review of the literature, the majority of early studies argued for a positive relationship; however, subsequent studies using Keynesian, neoclassical, and structuralist models provide inconclusive evidence on the issue for various groups of countries (Sandler and Hartley 1995; Deger and Sen 1995; Ram 1995; Dunne 1996; Smith 2000; Dunne and Uye 2010; Alptekin and Levin 2012; Churchill and Yew 2017; Yesilyurt and Yesilyurt 2019).

For example, Dunne and Uye (2010) conclude from their evaluation of 102 papers that military expenditure had a detrimental impact in 39% of cross-country and 35% of case studies, a beneficial effect in 20% of these studies, and unclear effects in 40%. Dunne and Tian (2013) then conducted a meta-analysis of 168 papers from a broader range of nations. They discover that military expenditure had a negative influence on economic growth in almost 44% of cross-country studies and 31% of case studies, compared to a beneficial effect in 20% of cross-country studies and 25% of case studies. Additionally, they observe that more recent studies are more likely to show a negative effect of military expenditure. More precisely, 53% of post-Cold War cross-country studies and 30% of case studies demonstrate a negative impact, compared to 38% of Cold War cross-country studies and 21% of case studies. Dunne and Tian remark, however, that 63% of the 72 case studies studied involve only five countries: Greece, Turkey, India, Pakistan, and the United States. Interestingly, the top four countries – for which military expenditures are beneficial – are in conflict with one of the others (Dunne and Tian 2013: 8).

Alptekin and Levine (2012) conducted a meta-analysis to analyze research on the impact of military expenditure on economic growth. This statistical method

analyzes the findings from empirical studies systematically through the structural differences in the results from individual studies. The authors conclude two major patterns based on 32 empirical studies. First, in general military spending stimulates economic growth. Second, this positive impact is greatest for developing nations, yet the findings do not imply that military spending has a detrimental influence on economic development in LDCs. In contrast, Dunne, Smith, and Willenbockel (2005) argue that the link between military expenditure and economic growth is mostly non-existent or negative for LDCs. Additionally, the connection is more negative in wealthy nations. Churchill and Yew (2017) mostly support Alptekin and Levine (2012) in their meta-analysis of 48 papers, except that the formerly positive association between military spending and economic growth has been replaced with a typically negative one.

» Why are there so disparate findings on the influence of military spending on economic growth? One critical reason is that model definitions are different. «

Dunne and Tian (2015) also examine heterogeneities and nonlinearity with a large data set covering 106 nations from 1988 to 2010. They find that military expenditures have a significant negative effect on economic growth in the short and long run. More precisely, aside from insignificant long-run impact of military expenditure in developed nations, this negative effect remains significant when the data set is broken down by development/income level (low, medium, high). Finally, Töngür and Elveren (2017) conducted comprehensive research in which they examined the relationship in question for 82 countries from 1988 to 2008 using an augmented Solow growth model with a focus on inequality. They conclude that military expenditure has a negative effect on economic growth for various country groups (e.g., development level, arms trade, or fuel dependency).

Why are there so disparate findings on the influence of military spending on economic growth? One critical reason is that model definitions are different. This establishes the functional structure of the study and the methodology for measuring military spending (e.g., share in GDP, growth rate, level or logarithm). Additionally, the model specifies which control variables to utilize, which has a substantial effect on the estimate results. One sometimes overlooked element is the evolution of security risks. This has an effect on military expenditure as well as economic growth (Smith 2000). A second explanation for the inconsistency in the findings is that production and military spending are bidirectional: output affects demand for military expenditure, whereas military expenditure affects aggregate demand and supply concurrently (Smith 2019). Third, the conclusions of these research are very dependent on the time period studied (particularly the Cold War and post-Cold War periods), as well as the time series, cross-section, or panel data used. Additionally, the selection of countries, especially their development stage, has a significant impact on the outcomes. Finally, non-linearity must be taken into account, since comparing countries with varying income levels or income levels within the same country might have an effect on the results. Despite a considerable body of work on the effect of military expenditure on economic growth, there are comparatively few studies on the effect of military spending on profit rates. Indeed, the profit rate is a critical indication of the health of a capitalist economy.

The impact of military spending on the rates of profit

Military spending has an effect on the rate of profit through capital productivity and organic composition of capital. Military expenditures have the potential to drain capital from the non-military sector, hence decreasing the organic composition of capital in that sector and lowering the cost of constant capital in the military sector. Additionally, military expenditures may ideologically alter the class structure, enabling capitalists to further exploit labor, thereby, boosting their profit rate (Smith 1977; 1983).

There are a few empirical studies examining the effect of military expenditure on profit rates. Georgiou (1992) shows that military spending had a significant beneficial impact on the rate of profit in the UK, the US, and former West Germany from 1958 to 1987. Kollias and Maniatis (2003) show a positive effect on the profit rate in the short term but a negative effect in the long run for Greece between 1962 and 1994. Dunne et al. (2013) find that, for the US between 1959 and 2000, the positive long-run link between military expenditure and profit rate is consistent with a Luxemburg-type scenario, but unemployment has only weakly significant effect on profit rate. Again, Ansari (2018) finds a positive effect for the US from 1973 to 2015. In another study on the US, Elveren (2020) incorporates the military sector into Foley's (1982) circuit of capital model. According to the modified model, a bigger military sector is associated with a greater profit rate. The study presents empirical support for the theoretical model's central propositions for the United States for 1968–2008. For Turkey from 1950 to 2008, Elveren and Özgür (2018) find that military spending reduces profit rates during turbulent years and boosts them when the economy is booming. Finally, in thorough research of 31 major nations, it is showed that military expenditure boosts profit rates in Australia, Brazil, Israel, Italy, and New Zealand but reduces them in Argentina, Austria, Canada, Finland, France, Germany, Ireland, and Norway (Elveren 2019). For South Korea and Portugal, the effects are ambiguous, being both positive and negative depending on the profit rates. However, the overall impact of military spending on profit rates is more likely to be negative than positive, and it is more likely to be negative for arms-importing nations.

Along with these time series research, there are a few panel data studies on the topic. Elveren and Hsu (2016, 2018) and Elveren (2019) draw two significant findings from analyses of 24 OECD and 32 large nations between 1963 and 2008 and 1963 and 2016, respectively. First, military spending raises profit rates in general. However, the effect is negative in the post-1980 period. Second, although military spending has a (weak) positive effect on profit rates in arms-exporting nations, it has a detrimental effect on profit rates in non-arms-exporting countries. Taken together, the findings of these studies provide credence to the Marxist claim that military spending helps counteract the tendency of profit rates to decline.

The impact of military spending on income inequality

Numerous studies have been conducted to determine the impact of military expenditure on economic inequality. This association may be explained in four

distinct ways (Lin and Ali 2009; Elveren 2012). To begin, classic Keynesian theory maintains that increasing military expenditure raises aggregate demand, which results in increased employment. Income inequality decreases as a result of the benefit to the jobless poor. Second, microeconomic theory predicts that when military expenditure increases, inter-sector inequality increases, since military-related firms pay higher salaries than other sectors (Ali 2007). Thirdly, military investment provides compensation for both low- and high-skilled employees, as well as highly trained research and development staff. As a result, salary disparity may be contingent upon their respective shares (Lin and Ali 2009). Finally, the welfare-defense trade-off suggests that governments that spend more on defense have less money available for social spending, such as health, education, or social transfers. Among them, trade-off is the most important mechanism through which military spending affects income distribution.

Abell (1994) was the first to investigate the possibility of a correlation between these two variables. He concludes that military spending exacerbated wealth inequality in the US between 1972 and 1991. Ali (2007) showed, using worldwide panel data from 1987 to 1997, that increased military expenditure resulted in increased income inequality. Similarly, Kentor et al. (2012) verified this positive link for 82 nations, Biscione and Caruso (2019) for 26 transition economies, Graham and Mueller (2019) for OECD countries, and Ghosh (2021) for the top 10 military spender countries. However, Ali (2012) finds that increased military expenditure lowers economic disparity in MENA nations from 1987 to 2005, while Michael and Stelios (2018) show that increased military spending reduces income inequality in 14 NATO countries from 1977 to 2007. In a parallel vein, Schwuchow (2018) demonstrates that, on average, the autocrat utilizes the military budget to redistribute money in favor of the poor. However, the dictator's own rent-seeking activities may erode the degree of redistribution and, in extreme situations, exacerbate economic inequality.

II MILITARY SPENDING EXACERBATED WEALTH INEQUALITY IN THE US BETWEEN 1972-1911. II

Another body of research has examined if there is a trade-off between military and civilian spending such as health and education. The research is inconclusive. For example, Lin, Ali, and Yu-Lung (2015) show that between 1988 and 2005, education and health expenditures increased in tandem with military spending in 29 OECD countries. They suggest that this is because the majority of these nations have developed welfare systems. Similarly, Zhang et al. (2017) indicate a positive association between military and social spending in BRICS and G7 nations from 1998 to 2011 and 1993 to 2007, respectively, but the relationship is equivocal in developing economies. Different welfare regimes may partially account for the inconclusive findings of these research. Indeed, Töngür and Elveren found a significant negative association between social democratic welfare regimes and military expenditure and income inequality during the period 1988–2003 (Töngür and Elveren 2015). Covering 130 countries between 1963 and 2000, Töngür et al. (2015) showed in a follow-up research that a similar link is valid for democratic governments. Accordingly, first, social democratic political regimes spend less on arms as a proportion of national GDP than other political regimes, supporting prior

results of a negative link between degree of democracy and military burden. Second, the study establishes a link between increased military burden and increased economic inequality.

There is a need for more extensive research to properly examine the influence of military expenditure on economic growth and inequality, since the existing literature mostly overlooks the connection between economic growth and inequality. The growth–inequality nexus is one of the most contentious issues in economics. In general, there are five approaches to describe how disparity impacts growth (Nissanke and Thorbecke 2010; Barro 2000). To begin, persons with higher income have a higher savings rate; that is, the marginal propensity to save from profit is greater than the marginal propensity to save from wages; hence, income redistribution from poor to affluent leads to increased savings and physical capital investment. As a result, increased inequality promotes economic growth. Second, since investment projects have significant sunk costs, asset concentration is a prerequisite for greater investment rates. That is, more inequality in terms of wealth distribution raises the likelihood of investing, which boosts growth. Thirdly, increased inequality enhances the incentives to work more and invest. Thus, if people are equal in terms of incomes, there is no incentive for one to make an effort that results in increased production. In other words, more income dispersion is a natural consequence of disparate labor efforts, which benefits overall productivity.

On the other hand, two theories emphasize inequality's detrimental effect on growth. First, when financial markets are imperfect, impoverished individuals have a propensity to invest less in human capital that generates relatively high rates of return, benefiting society as a whole. Thus, a distortion in terms of wealth transfer from poor to affluent reduces the average productivity of investment in this situation. That is, when financial markets are imperfect, underinvestment by the poor indicates that economic growth would likely to be lower. Finally, according to the new political economy of development theories (i.e., modern theories), inequality may reduce economic growth because voters, as a reaction to intolerable inequality, ask for higher taxes and disfavor pro-business policies, creating political and social instability which leads to uncertainty and lower investment incentive (inter alia Alesina and Rodrik 1994; Kanbur 2000); unproductive rent-seeking activities, high transaction costs, and increased insecurity of property rights (Nissanke and Thorbecke 2010, p. 798).

In comparison to the other linkages, the one between profit rate and income inequality is more straightforward. Accordingly, greater profit rate is associated with increased income inequality. The impact of inequality on the profit rate is determined by the ability of the low-saving classes to accrue debt. According to the paradox of thrift, transferring wage income from low-to-high-saving classes diminishes aggregate demand by increasing leakage. This could result in a decrease in profit rates. However, if low-saving classes are able to acquire debt as a result of increased access to credit and growing asset prices, the negative effects of rising inequality can be averted, at least in the short term.

It is against this background that Elveren and Taşıran (2021) conduct the first trivariate analysis of the links between military expenditure, inequality, and profitability. The research examines 21 countries from 1988 to 2008 to find that military spending has a positive influence on income inequality, whereas income inequality has a positive effect on profit rates. In contrast, military spending has a very small positive effect on profit rate. However, when unobserved heterogeneity is addressed, these findings drastically change. Accordingly, although the positive effect of income inequality on profit rate remains the same for each segment, for some segments, the effect of military spending on income inequality and profit rate become negative.

Conclusion

The goal of this short essay was to briefly review an important literature: the effect of military spending on the economy. To this end, we focused on empirical studies that investigate the effect of military expenditure on economic growth, the rate of profit, and income inequality, three interrelated variables.

The effect of military spending on economic growth is perhaps the most popular topic in defense economics literature. The fact that military spending may have both a positive impact on economic growth by boosting aggregate demand, and a negative impact by crowding out productive investments in education leads to immense empirical literature. This literature has yielded conflicting results as they relied on different models, using different methods and focusing on different sets of countries and time periods. However, it is safe to argue that the most recent studies have tended to find a negative impact on economic growth. Another strand of defense economics examines the impact of military spending on a relevant variable: the rate of profit. Overall, this literature has suggested that while the effect on profit rate is more likely to be positive for arms-exporting countries such as the US and the UK, it is more likely to be negative for arms-importing countries like Turkey and Greece.

A SIZEABLE LITERATURE HAS SUGGESTED THAT INCREASING MILITARY SPENDING IS LIKELY TO DETERIORATE INCOME DISTRIBUTION BECAUSE DISPROPORTIONATE MILITARY BUDGETS CAUSE LESS FUNDS FOR EDUCATION AND HEALTH EXPENDITURES THAT WOULD OTHERWISE IMRPOVE INCOME DISTRIBUTION

The opportunity cost of military spending is immense. The tradeoff between military spending and social expenditures in government budgets is evident. Therefore, a sizeable literature has suggested that increasing military spending is likely to deteriorate income distribution because disproportionate military budgets cause less funds for education and health expenditures that would otherwise improve income distribution.

This brief literature review suggests that there is a need for further studies to examine the complex relationship between military spending, economic growth/profit rate, and income inequality in trivariate settings.

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THE ROLE OF PARTICIPATORY CULTURAL PRODUCTION IN SUBVERTING SYMBOLIC ANNIHILATION OF LGBT PEOPLE IN SLOVAKIA

Introduction

The narratives about lesbian, gay, bisexual and transgender (LGBT) people have long been absent from the Slovak media. In early 1990s, Slovak LGBT activists have established their first organizations and started advocating for the social equality of LGBT people. In the past decades, in addition to lobbying for antidiscrimination legislation and legal recognition of same-sex partnerships, Slovak LGBT rights advocates, writers and artists have decided to take it upon themselves to create their own narratives through various forms of cultural production, including print media, literature, visual art, film and theatre festivals, curatorial activism, and digital media. This essay aims to highlight the importance of "queer culture--making" in contemporary Slovakia. I argue that participatory cultural production is a powerful force for challenging symbolic annihilation of LGBT people. Situated at the intersection of cultural studies, media studies, and queer studies, this essay is part of a larger study that seeks to understand the role of cultural production in fostering social transformation.

Studies of Invisibility of Marginalized Groups in Media

Communication scholarship abounds with the studies of invisibility, underrepresentation, silencing and stereotyping of marginalized groups in the media (e.g., Gerbner and Gross 1976; Tuchman 1978; Rakow 1986; hooks 1992; Dyer 1993; Gross 1993; Hall 1997; Eng & Hom 1998; Gross & Woods 1999; Gross 2001; Nederveen Pieterse 2003; Bernardi 2007; Venzo & Hess 2013; Millward et al 2017; Dines et al 2015; Dhoest, Szulc and Eeckhout 2017; Gutsche et al 2022). While the types of media stereotypes, tropes and archetypes of marginalized groups vary across cultures and genres, media critics agree that stereotypes of marginalized groups function primarily to magnify differences and construct and naturalize hierarchies, in order to justify and preserve the existing status quo.

Feminist media studies scholars have long focused on theorizing the effects of underrepresentation and stereotyping of women in the media as means of maintaining social inequality. Media play an important role in constructing and perpetuating dominant ideologies of gender; the media landscape characterized

by the abundance of stereotypical representations of women as sex objects, powerless victims, and incompetent decision makers, and the scarcity of media representations of women as smart, assertive, powerful and competent, undeniably contributes to gender socialization that reinforces gender stereotypes.

Lena Rakow (1986), notably, distinguished between three approaches to feminist analysis of popular culture: 1. the images and representations approach; 2. the recovery and reappraisal approach; and 3. the cultural theory approach. I am particularly interested in the images and representation approach that seeks to answer the following important questions: "(1) what kind of images are present and what do those images reveal about women's position in the culture? (2) whose images are they and whom do they serve? (3) what are the consequences of those images? (4) how do such images have meaning?" (Rakow, p. 203).

II STEROTYPES OF MARGINALIZED GROUPS FUNCTION PRIMARILY TO MAGNIFY DIFFERENCES AND CONSTRUCT AND NATURALIZE HIERARCHIES, IN ORDER TO JUSTIFY AND PRESERVE THE EXISTING STATUS QUO. II

The anthology *This bridge called my back: Writings by radical women of color*, edited by Cherrie Moraga and Gloria Anzaldúa (1981), has a significant place in feminist studies because it brings concerted attention to the negative stereotyping and invisibility of Asian American, Black, Chicana and Native American women. Their approach to situate cultural analysis of practices that perpetuate social inequalities of marginalized groups at the intersection of gender, race, class and sexuality served as a catalyst of changes in feminist theory and activism.

Symbolic Annihilation

Two interrelated theoretical concepts – "symbolic annihilation" (Gerbner and Gross 1976; Tuchman 1978) and "symbolic violence" (Bourdieu 1992, 2001) – have been used to conceptualize the systematic erasure, underrepresentation, silencing, stereotyping, delegitimization and stigmatization of minority groups in the media.

In their study of the depiction of characters on network television drama, George Gerbner and Larry Gross (1976) concluded that "representation in the fictional world [of television] signifies social existence; absence means symbolic annihilation" (p. 182). In her work on the representation of women in the mass media, Gayle Tuchman (1978) further distinguished between three tiers to the symbolic annihilation process – omission (leaving out a minority group), trivialization (stereotyping or marginalizing), and condemnation (highlighting negative aspects) – that result in the stigmatization, underrepresentation or a complete invisibility of certain groups of people in different types of media.

Theoretical conceptualization of symbolic violence features prominently in the work by French sociologist Pierre Bourdieu, whose scholarship has been primarily concerned with the study of the dynamics and manifestations of power in society. According to Bourdieu (2001) symbolic domination is manifested in the power differential between social groups, often in a very subtle way that is imperceptible to the subordinated groups because "the dominated tend to adopt the views of the dominant point of view on themselves" (p. 119). Bourdieu asserts that

symbolic annihilation is a form of symbolic violence that ignores the legitimacy of an identity. As he explains in his reflection on the LGBT movement's attempts to claim visibility,

> [s]ymbolic domination takes the form of a denial of public, visible existence. Oppression in the form of 'invisibilization' comes through a refusal of legitimate, public existence, i.e. of an existence that is known and recognized, especially by law, and through a stigmatization which never appears more clearly than when the [LGBT] movement claims visibility. (Bourdieu, 2001, p. 119)

His focus on the centrality of symbolic practices in social categorization is of utmost importance here. Bourdieu (1991) reiterates that media have symbolic power to construct reality, and given the prominent place of media in our lives, media are among the important sites where symbolic violence is exercised. His theorizing of symbolic annihilation and symbolic violence is applicable to a variety of contexts and hierarchies (e.g., social class, nationality, ethnicity, race, gender, sexual orientation, etc.).

In his book, *Up from invisibility: Lesbians, gay men and the media in America*, Larry Gross (2001) points out that "most mediated images reflect the experiences and interests of the majority groups in our society" (p. 11), and this is particularly true in the for-profit media. Gross theorizes the long history of underrepresentation of LGBT people in the media as a form of symbolic annihilation accomplished through the systematic erasure and delegitimization of the experiences of sexual minorities, which has clear consequences, as it suggests their powerlessness in a society. Similar disciplining effects of media invisibility apply to other marginalized groups, including racial and ethnic minorities. As Gross (2001) further explains,

> minorities share a common media fate of relative invisibility and demeaning stereotypes. But there are differences as well as similarities in the ways various minorities are treated by the mass media. And because there are important differences in the conditions they face in our society, the effects of their media images are different for members of the various minority groups. (p. 12)

In his analysis of the media representation of different marginalized groups (Irish, Chinese, Jews), who have been, historically, constructed as inferior through hegemonic (white supremacist) racial ideology, Jan Nederveen Pieterse (2003) points out that "While the common denominator is power – the power that arises from a hierarchical situation and the power required to maintain that situation – it is also a matter of the anxiety that comes with power and privilege" (p. 114). It is the fear of losing power and privilege that motivates injurious stereotyping of various minority groups in the media. As Nederveen Pieterse (2003) put it,

> Existing differences and inequalities are magnified for fear they will diminish. Stereotypes are reconstructed and reasserted precisely when existing hierarchies are being challenged and inequalities are or may be lessening. Accordingly, stereotyping tends to be not merely a matter of domination but above all, of humiliation. Different and subordinate groups are not merely described, they are debased, degraded.

> Perceptions are manipulated in order to enhance and to magnify social distance. (p. 114)

According to Emilio Alvarez Icaza et al (2011), the forms of structural discrimination practiced against marginalized social groups (e.g., persons living in poverty, the elderly, indigenous peoples, LGBTI individuals, persons with disabilities, migrants, the homeless, victims of trafficking and prostitution, etc.) are obvious manifestations of cultural practices of social exclusion. The authors further explain that

> discrimination should cease to be regarded only as a cultural practice that denigrates and instead be regarded for what it is, i.e., structural inequality: an unacceptable social relationship of domination that violates human rights and puts entire human groups at a disadvantage and relegates them to unequal status, thereby denying them the effective enjoyment of their human rights and development. (p. 75)

It is important to recognize that "the cultural representations that society shares and that have deep historical roots, such as stigmas and prejudices, give rise to the unequal treatment that the groups that are the targets of the discrimination suffer, and account for the social disadvantage they endure" (Alvarez Icaza et al, p. 75). These injurious cultural representations have powerful material effects on the quality of life of the marginalized groups.

Stereotypical media representations that perpetuate stigmatization, degradation and dehumanization of marginalized groups have significant consequences, considering that media wield enormous power to influence people's beliefs, attitudes and behaviors. Media effects scholarship has long asserted that media play an important role in the diffusion and legitimization of the social norms and dominant values of society, silencing of the minority views and experiences, and consequently, also in influencing beliefs, attitudes and behaviors towards LGBT people. Stereotyping of sexual minorities in mainstream media reinforces prejudice towards LGBT individuals, and thus negatively affects the lives of self-identified LGBT individuals. And, even though in the past two decades, there has been an increasingly growing number of gay, lesbian and some transgender characters in the American film and television production, with a few exceptions, the majority of these protagonists are affluent and white. The lives of queer people of color or those who are economically disadvantaged, homeless, disabled or marginalized in other ways continue to be absent from the media.

THE LIVES OF QUEER PEOPLE OF COLOR OR THOSE WHO ARE ECONOMICALLY DISADVANTAGED, HOMELESS, DISABLED OR MARGINALIZED IN OTHER WAYS CONTINUE TO BE ABSENT FROM THE MEDIA.

It is important to acknowledge that media not only have the power to symbolically annihilate those who are relegated to occupy positions in the margins of a society, media also have the power to subvert the injurious practices of symbolic violence. This subversive potential of media is the reason why I am interested in the study of media representations and various forms of cultural production initiated by LGBT rights advocates.

As Bourdieu (2001) explains, the gay and lesbian movement is "a movement of revolt against the particular form of symbolic violence [... that] calls into question

the prevailing symbolic order and poses in an entirely radical way the question of the foundations of that order and the conditions for a successful mobilization with a view to subverting it" (p. 118). Bourdieu concludes that perhaps

> the only way for such a movement to escape a mutually reinforcing ghettoization and sectarianism is for it to place the specific capacities that it owes to the relatively improbable combination of a strong subversive disposition, linked to a stigmatized status, and strong cultural capital at the service of the social movement as a whole; or to think in utopian terms for a moment - to place itself at the avant-garde, at least as regards theoretical work and symbolic action (in which some homosexual groups are pastmasters), of the subversive political and scientific movements, thus applying, in the service of the universal, the particular advantages which distinguish homosexuals from other stigmatized groups. (p. 124)

Participatory Cultural Production by/of/for LGBT People

Given that media have the power to perpetuate symbolic annihilation of marginalized groups, as well as the potential to subvert the injurious practices of symbolic violence, the important question that we must ask is – if media invisibility suggests powerlessness, does gaining media visibility equal empowerment? In answering this question, I apply Gross' (2001) distinction between media representations made by/of/for the majority and those made by/of/for the minority groups (originally proposed by American sociologist Elihu Katz). My primary focus is on media representations made by/of/for LGBT people, and their potential, in the context of participatory cultural production, to counter practices of symbolic violence, to empower marginalized groups, and to inspire societal transformation. I also pay attention to the context in which these forms of participatory cultural production emerge.

IF MEDIA INVISIBILTY SUGGESTS POWERLESSNESS, DOES GAINING MEDIA VISIBILITY EQUAL EMPOWERMENT?

In early 1990s, when Slovak LGBT activists began gaining societal visibility and challenging dominant heteronormative regimes, the mainstream media responded with stereotyping, humiliation and stigmatization of sexual minorities. Homophobic constructs were echoed and reinforced not only in the media but also in other spheres of Slovak culture (e.g., the Slovak Parliament, the Catholic Church). Since the beginning of the new millennium, the news media have expressed interest in the coverage of events organized by LGBT activists, albeit not always sympathetic or accurate. The most decisive push towards media visibility came from LGBT rights advocates; without them, the media representation of sexual minorities would have remained, most likely, on the level of sensational tabloid portrayals inundated with stereotypes and stigmatization. Achieving political visibility in media and society at large has become an important goal for Slovak LGBT activists, who have succeeded – on their own terms – not only to lift sexual minorities up from invisibility but to create their own media as visible sites for contesting heteronormativity.

To counter stereotyping and stigmatization of sexual minorities in mainstream media, Slovak LGBT rights advocates, writers and artists have decided to take it upon themselves to create their own narratives. In the past three decades, different forms of participatory cultural production have contributed to the increased visibility of LGBT people in Slovakia. Notable examples include community-based print periodicals *L-listy*, *Séparé*, *Atribút*, *Q archív*, and *QYS magazín* (published in print and digital format), multi-genre art exhibits, blogs, podcasts, webcasts, and films and performances created by/of/about LGBTQ people.

The advent of social media in the early 2000s have also made it possible for Slovak LGBT rights advocates to exchange information, coordinate and collaborate with a large body of networked publics. The ubiquity of social networking sites and their affordances allowed LGBT people from distant parts of the country to connect with each other, and to participate in creating their own culture and community, both online and offline. Some have embraced the social media logic and aesthetic by taking on the role of influencers in their effort to bring positive visibility to LGBT rights advocacy in Slovakia. Being heavily invested in cultivating a robust social media presence, however, also means being more vulnerable to the attacks from trolls, cyberbullies and vocal opponents of LGBT rights. Nevertheless, having the ability to exercise one's agency by creating original user-generated textual, visual and audiovisual content represents a significant step forward, considering that an in-depth coverage of LGBT rights advocacy continues to be largely absent from Slovak mainstream media characterized by the heteronormative modus operandi.

BEING HEAVILY INVESTED IN CULTIVATING A ROBUST SOCIAL MEDIA PRESENCE, HOWEVER, ALSO MEANS BEING MORE VULNERABLE TO THE ATTACKS FROM TROLLS, CYBERBULLIES AND VOCAL OPPONENTS OF LGBT RIGHTS

Social media platforms, such as Facebook, Twitter, Instragram and YouTube are now routinely utilized by Slovak LGBT rights advocates for promoting events organized by/of/for LGBT people in Slovakia, including the annual LGBT Pride Festival (*Dúhový Pride*), The Queer Film Festival (*Filmový festival inakosti*), and the *Drama Queer* Festival. Facebook, YouTube and Spotify are also used for streaming the webcast/podcast *Teplá vlna* (Queer Wave) and the electronic publishing platform Issuu is used for the distribution of the digital version of the *QYS magazine*.

The growing visibility of authentic narratives created by, for and about LGBT people in Slovakia is remarkable, considering that prior to 1989, representation of LGBT people in Slovak media, visual art, film and theatre was punctuated by silences, erasures and omissions. Needless to say, the themes were not completely absent but reading in between the lines was necessary.

The Importance of "Queer Culture-Making" in Slovakia

Can culture-making change the world? Anna Daučíková, a Slovak visual artist who uses glass work, photography, performance and video art as a vehicle for her exploration of queer subjectivity, was one of a handful of artists, who in 1990s started carving out spaces for the representation of marginalized queer subjectivities

through visual art and other forms of expressive culture. Her 2019 solo exhibition in Esterházyho Palác in Bratislava titled "Work in Progress: 7 Situations," along with numerous art exhibits at home and abroad, are a testimony that Slovak queer artists no longer have to hide. In her reflection on her artistic trajectory, Anna told me, "One way to change culture is to create your own culture. [...] However, there is still no such thing as queer art in Slovakia, there are only queer artists" (A. Daučíková, personal communication, Jan. 29, 2021).

In their essay "Sex in Public," Berlant and Warner (1998) explain that "queer--world making" disrupts a singular notion of community and identity:

> By queer culture we mean a world-making project, where "world," like "public," differs from community or group because it necessarily includes more people that can be identified, more spaces that can be mapped beyond a few reference points, modes of feeling that can be learned rather than experienced as a birthright. The queer world is a space of entrances, exits, unsystematized lines of acquaintance, projected horizons, typifying examples, alternate routes, blockages, incommensurate registers, by definition unrealizable as community or identity. Every cultural form, be it a novel or an after-hours club or an academic lecture, indexes a virtual social world, in ways that range from a repertoire of styles and speech genres to referential metaculture. (p. 558)

Queer culture-making in contemporary Slovakia has been initiated by a variety of social actors who are part of a larger network of heterogeneous groups and communities. It is important to acknowledge that LGBT people continue to be stigmatized and ostracized in Slovakia, and heteronormative attitudes remain the norm. Notwithstanding, authentic narratives about the experiences of LGBT people abound.

This essay has attempted to call attention to the importance of participatory cultural production as an act of symbolic resistance that aims to subvert the narratives that stigmatize, pathologize, and repudiate queerness. And while it is undisputable that authentic narratives about the lives of LGBT people, along with artistic explorations of counter-hegemonic representations of gender and sexual subjectivities, each in its own way, challenge the history of symbolic annihilation of LGBT people in Slovak media and culture, it is yet to be seen how effective will "queer culture-making" be in subverting the prevailing symbolic order.

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MOMMY AND ME: ASSESSING THE IMPACT OF MATERNAL INVESTMENTS ON CHILDREN'S COGNITIVE AND NON-COGNITIVE OUTCOMES

Abstract

Using data from the National Longitudinal Survey of the Youth (NLSY), this paper explores how maternal inputs impact children's cognitive and non-cognitive outcomes directly and indirectly through the intergenerational transmission of abilities. Following Todd and Wolpin (2003, 2007) and as applied in Del Bono et. al. (2016), I use a cumulative value added (CVA) model to show that maternal time investments, particularly for children in their preschool and early elementary school years (ages 3-9), positively and significantly impact her children's subsequent cognitive and non-cognitive skills. Using the maternal linkage between two datasets in the NLSY. I measure maternal inputs using Home Observation of the Environment (HOME) scores, cognitive skills using Peabody Individual Achievement Test (PIAT) scores, and non-cognitive skills using Rosenberg Self-Esteem and Pearlin Mastery scores. I find that a one standard deviation increase in maternal inputs increases cognitive scores by 0.12 to 0.18 and non-cognitive scores by 0.17 to 0.27 standard deviations. Accounting for parenting style, non-maternal care, as well as birth and family characteristics, results show the strongest impact of maternal investments on reading achievement and locus of control. There is also evidence that maternal skills directly impact children's skills, yet there is little evidence that maternal time investments intermediate the direct transmission of skills between mothers and their children. Future work should explore the indirect channel through which maternal investments impact skills further. Additionally, an instrumental variables approach could increase the validity of measurements by account for other sources of endogeneity.

(JEL: J24, J15, I14, I20, I24)

Keywords: Maternal investment, intergenerational mobility, cognitive and non-cognitive skill formation

I. Introduction

"The best inheritance a parent can give his children is a few minutes of his time each day." ~O.A. Battista

Academic research, ranging from early childhood development to economics, concur that parents matter. While parents' socioeconomic status, skills, and education levels strongly predict their children's economic outcomes, a child's *time* spent with her parent, especially mother, impacts her outcomes (see, for instance, Becker, 1965). This paper explores how a mother's investments impacts her child's economic outcomes directly or indirectly through intergenerational transmission of skills. Using data from the National Longitudinal Survey of the Youth (NLSY), I capitalize on the maternal linkage between datasets to examine how a child's interactions with her mother impacts her child's cognitive and non-cognitive skills.

To assess the impacts of maternal investments on the child's cognitive and non-cognitive outcomes I adopt the model used in Del Bono et. al. (2016). In this study, the authors account for the independent impact of non-maternal care, parenting style, birth characteristics, and family structure to assess the magnitude and significance of maternal time investments, specifically, on child outcomes. They find the greatest returns to maternal inputs occur in early childhood. Therefore, I measure how the time mothers engage with their children impacts their outcomes at different stages of childhood including infancy (0-2 years of age), preschool years (3-5 years old), early elementary school (6-9 years old) and school-aged (10 years or older).

The NLSY data includes extensive information on both mother and child and their interactions over time. One such assessment is the Home Observation Measurement of the Environment (HOME) which measures mostly maternal investments in the child related to cognitive stimulation and emotional stimulation. HOME scores are used in related work such as Todd and Wolpin (2007) and Carneiro and Ginja (2016). I use HOME scores to measure maternal inputs.

In a related field, many works assess the impact of parent endowments on their children's outcomes by measuring intergenerational mobility of income, education, and skills. In this study, I further seek to explore how the intergenerational persistence of cognitive and non-cognitive abilities between a child and his mother is intermediated by maternal time investments. I use Peabody Individual Achievement Test (PIAT) scores for children and Armed Forces Qualification Test (AFQT) scores for mothers to measure cognitive skills while I use the Rosenberg Self-Esteem Score and Pearlin Mastery Scale to measure non-cognitive skills for mother and child.

This paper seeks to contribute to existing literature by assessing the impact of maternal investments using HOME score and NLSY data. Beyond this paper seeks to assess how the timing of maternal investments changes children's skill formation. Finally, I seek to assess the direct transmission of skills while accounting for maternal investments, and examine whether maternal investments indirectly impact children's skills through maternal skills.

In order to assess the payoff of maternal inputs, past investments must yield future returns. Following Del Bono et. al. (2016), and Todd and Wolpin (2003, 2007), I use a cumulative value added (CVA) model to show how maternal investments, over time, impact the child's outcomes. I find that maternal inputs positively and highly significantly impact both the child's cognitive and non-cognitive scores. A one standard deviation increase in HOME scores increase a child's cognitive scores

by approximately 0.2 standard deviations. Non-cognitive impacts range and an impact as high as 0.3 standard deviations is measured using the CVA model.

Further, I find there is also a significant independent impact of the mother's skills on her child skills. I estimate a direct transmission of skills beyond the impact the time spent with the mother and the mother's parenting style on skills. Confirming past work, I find that maternal investments made in early years yield the highest returns. However, I find the strongest support for investment made during early elementary school years as compared to during infancy (0-2). There is evidence that maternal investments matter during preschool years (3-5). There is weak evidence that maternal time investments intermediate the direct transmission of skills between mothers and their children.

This paper is organized as follow. Section II will outline the related literature and background for this project. Section III will describe and summarize the data used from the NLSY79 and NLSY79YA. Section IV details the methodology while Section V discusses the results. Section VI concludes.

II

MATERNAL INVESTMENTS MADE IN EARLY YEARS YIELD THE HIGHEST RETURNS. HOWEVER, I FIND THE STRONGEST SUPPORT FOR INVESTMENT MADE DURING EARLY ELEMENTARY SCHOOL YEARS AS COMPARED TO DURING INFANCY.

II

II. Background

a) Parental Investment and Child Outcomes

Parental time matters for child outcomes. As early as Becker (1965), parental investment enters the child's production function. A significant contribution of this model was to include time use alongside consumption of good in the household production function. Further, Becker and Tomes (1979, 1986) assess the impact of parental investments in education on childhood outcomes using a multigenerational model. These studies, alongside others, lay the groundwork to show that non-pecuniary parental investments impact the next generation's production function.

More recent work, such as Cunha et. al. (2006) model the importance of early childhood investments on later outcomes. Cunha and Heckman (2008), for instance, find that there are critical periods of child development and higher returns to investments (or interventions) made to young children. Carneiro and Rodrigues (2009) find that a mother's time spent with her child has the highest returns for younger children. Using the Panel Study of Income Dynamics (PSID), the study shows that an increase in maternal time investments is the most impactful on children between the ages of 3 and 6. Del Boca et. al. (2016) examine how maternal time investment, versus child's own investment, matters for the child's cognitive outcomes during adolescence. They find that adolescent investments made by the child is, in fact, more important than maternal investments at this life stage.

However, the manner in which time is spent matters. Fiorini and Keane (2014), for instance, find that time spent with parents engaged in educational activities increases child cognitive outcomes based on the Longitudinal Study of Australian

Children. Time spent with the mother does not improve children's outcomes alone. Similarly, Zick et. al. (2001) examine maternal employment to assess its impact on parent-child activities that would enrich human capital formation. They find the direct effect on child outcomes of maternal employment is negligible while both parents in home where the mother works tend to read and engage in academic activities with their children more as compared to homes where mothers do not work.

Del Bono et. al. (2016) use data from the UK Millenium Cohort Study to explore how maternal investments impact children's cognitive outcomes. Accounting for non-maternal care, family characteristics, and parenting style, they find that increases in maternal inputs, in early childhood, in both educational and recreational stimulation increase cognitive scores. Parenting style impacts the child's cognitive outcomes independent of maternal time investments. I consider the role of parenting style in determining children's outcomes as well.

Other research explores the role of parenting style on cognitive scores. Brenoe et. al. (2019), for instance, show that parenting style matters in intermediating the transmission of skills from one generation to the next. Cobb-Clark et. al. (2016) show that parenting style can be modeled as an endogenous investment in the production of child development.

b) Intergenerational Mobility

The intergenerational persistence of skills is an alternative measure of intergenerational mobility. Most commonly, mobility is measured as the elasticity between parent and child's (permanent) income while controlling for life cycle biases (Solon, 1992, 1999). The literature extends to include intergenerational persistence of education as well as of cognitive and non-cognitive skills. Intergenerational mobility, and specifically upward mobility, is of interest in the economics field as it measures the equality of opportunity between generations. That is, the intergenerational elasticities reveal how much of a child' economic outcomes is pre-determined by her parents' status. Mobility is the complement of intergenerational persistence and shows how much a child's effort, and perhaps luck, determines her economic success.

Upward mobility in both educational attainment and income is relatively low in the United States as compared to other OECD countries (Blanden et. al., 2005). Children tend to experience stronger persistence in educational outcomes and income level with their parents as compared to children from European countries or Canada (Alesina et. al., 2018). The data stands in contrast to the U.S. national creed for which a pillar of the "American Dream" is that equality of opportunity does exist and that effort pays off economically. As intergenerational mobility focuses on the relationship between parent and child outcomes, this study examines whether parental inputs (specially, time spent with mother) impact mobility outcomes. For instance, is the intergenerational transmission or skills stronger for children with mothers who engage with them more often?

There is recognizable heterogeneity in intergenerational income mobility along the parental income distribution such that lower, middle, and high income families experience different levels of income persistence. Kourtellos et. al. (2020), for

instance, find that income is significantly more persistent between parents and children born to lower-middle income families. While substantial evidence exists to demonstrate non-linearities in intergenerational mobility, few studies have been explored *what* impacts intergenerational mobility.

The literature on mobility has since extended to measure the intergenerational transmission of skills. Black and Devereux (2010) review previous literature on the intergenerational persistence of cognitive and non-cognitive abilities highlighting works such as Black et. al. (2009) and Gronqist et. al. (2010) who show a strong relationship between parents' IQ scores and personality traits.

Anger (2012) also tests the direct transmission of skills from parents to their children and finds that cognitive skills (as compared to non-cognitive skills) are more strongly transmitted between parents and children. This study uses the Big 5 dimensions of personality and the locus of control to measure non-cognitive skills and finds that socioeconomic background does not impact intelligence or personality.

Kourtellos et. al. (2020) show intergenerational persistence of cognitive skills are strongest between mothers and daughters from lower middle income households. The heterogeneity begs the question of whether there are other determinants, such as maternal time investment or parenting style, that affect the elasticity of skills between parents and their children. This is of particular interest between mothers and daughters as their persistence of skills is strongest.

II
INTERGENERATIONAL PERSISTENCE OF COGNITIVE SKILLS ARE STRONGEST BETWEEN MOTHERS AND DAUGHTERS FROM LOWER MIDDLE INCOME HOUSEHOLDS.
II

Blanden, et. al. (2007) and Hsin and Xie (2012) use the decomposition modeling approach where the product of the effect of parental income on ability and ability on child income shows how much of the intergenerational income coefficient is explainable through cognitive and non-cognitive abilities. Blanden et. al. (2007) use the British Cohort Study and National Child Development Survey and find that non-cognitive skills can explain 19% of intergenerational income persistence while cognitive abilities can explain 27%.

While there is a genetic component to the transmission of skills (and subsequent outcomes) between parents and their children, Francesconi et. al. 2016 argue that "genes need sufficiently rich environments to fully express themselves." Thus, the environment in which the child is raised plays a pivotal role in child outcomes and parental time plays a crucial role in shaping that environment. The authors argue that parents lay the foundation for lifetime skill development through the family and home environment. Heckman and Mosso (2014) suggest time investments may complement or substitute for goods investments. They argue that parents may spend time with their children to more accurately assess their abilities (and hence their potential return on investment) of their children and to make more precisely targeted.

Therefore, there is a rich literature that supports the importance of parental investments, be they through time, endowments or otherwise, on child outcomes. This study seeks to contribute to this area. The next section details the data used in this study.

III. Data

I use data from the National Longitudinal Survey (NLS), which tracks information on U.S. respondents' income, education, demographics, time use, and life events over time. The NLS is comprised of four cohorts, including the National Longitudinal Survey of the Youth 1979 (NLSY7) and NLSY79 Children and Young Adults. The former is a cohort of individuals whose information has been collected since 1979. The latter is comprised of all children born to the mothers in the NLSY79 cohort.

The NLSY79 began gathering information on respondents' labor market behavior, education, family background, family life, and income over multiple points in time starting in 1979. The cohort consists of 12,686 individuals who were surveyed annually up to 1994 and biennially since. Information through 2018 is available for the survey, yet this study looks at relevant surveys from 1979-2016.

In 1986, a separate survey in the NLSY was taken of the biological children born to mothers in the NLSY79 cohort. The Child Adult Survey (CNLSY79) collects information on the child's demographics, home environment, family life, schooling, cognitive and non-cognitive skills. Since 1988, additional information has been collected on activities, attitudes, family values, and relationships. The Young Adult survey (NLSY79YA) began in 1994 and includes information similar to that of the NLSY79 survey including questions about education, training, employment, income, expectations, and political attitudes. These samples are indiscernible in the NLSY database, and we use information from both the child and young adult surveys.

Through the waves of the survey, a variety of relevant assessments have been recorded in the surveys included cognitive tests, non-cognitive tests, and maternal investments, as detailed below.

The NLSY79 is commonly used in economics literature including in studies measuring intergenerational elasticities such as Janti et. al. (2006), Bhattacharya and Mazumder (2011), Heckman and Raut (2016), among others. The NLSY has also been an important source for past work on maternal time investment and cognitive payoff (Todd and Wolpin, 2007; Bernal, 2008; Bernal and Keane, 2011; Carneiro and Ginja, 2016).

a) Cognitive and Non-Cognitive Abilities

The maternal (NLSY79) and child (NLSY79YA) collect a variety of information on cognitive and non-cognitive skills throughout the waves. Following the literature, I use four cognitive measures for the child and one for the mother. Further, I use two identical assessment measures of non-cognitive skills for the child and mother.

I use the four Peabody assessments to measure the child's cognitive abilities. These include the Peabody Picture Vocabulary Test (PPVT) which measures verbal aptitude alongside the Peabody Individual Achievement Tests (PIAT) that measure academic achievement in math, reading recognition, and reading comprehension. Interviewees in the CNLSY79/NLSY79YA cohort are issued these assessments based on their "PPVT age" ranging from 3 to 18, which determines their entry point into each assessment. PIAT scores are commonly used in the literature to measure

cognitive skills (see, for instance, Carneiro et. al., 2008; Carneiro et. al., 2013; Durlauf et. al., 2017, among others).

Mothers did not take any of the Peabody assessments. The mother's cognitive abilities are measured using Armed Forces Qualification Test (AFQT) scores. The AFQT is a composite score of four of the nine sub-tests administered in the Armed Services Vocational Aptitude Battery (ASVAB) test. The AFQT score is a common benchmark for cognitive skills used in studies. See Borghans et. al. (2011), for instance, who list 50 studies that use the AFQT as a measurement for cognitive ability.

The NLSY79 has fewer measures of non-cognitive abilities, yet both children and their mothers have reported scores for self-esteem and locus of control using the Rosenberg Self-Esteem and Pearlin Mastery tests, respectively. The self-esteem assessment measures global self-worth by collecting information on both positive and negative feelings about one's self. The Pearlin Mastery scale measures the extent to which an individual believes their life chances are based on personal control. These non-cognitive indicators are used at large in previous work including Heckman et. al. (2006) and Carneiro et. al. (2007). Both assessments use a Likert scale format where higher values imply higher self-esteem or a stronger locus of control. Assessment scores are standardized in estimation. A full description of the variables used in both the cognitive and non-cognitive assessments can be found in an online appendix.

b) Maternal Time Investment- Home Observation for Measurement of the Environment (HOME)

Developed by Caldwell and Bradley in 1984, the Home Observation for Measurement of the Environment (HOME) uses information about respondents' home life to assess the child's stimulation along a cognitive dimension, an emotional dimension, and using a composite score. The assessment is comprehensive and there are hundreds of variables in the NLSY79YA survey each year that are included in the HOME assessment.

HOME inventory scores are based on age. Age-appropriate surveys are conducted over four categories (0-2, 3-5, 6-9, 10+). For the youngest group, questions ranging from how often the mother takes the child out of the house to her response to a child tantrum are surveyed. For the toddler and preschool group (ages 3-5), the mother is asked how often she reads to the child, helps her child learn colors, numbers, or letters, as well as how often the child watches television, among other variables. For school-aged children, the survey includes questions about the child's hobbies and chores as well as the frequency of higher-level outings, such as a trip to the museum. Parental behavior control, such as responses to a tantrum, low grades, etc., are asked in every survey. For each round, the interviewer also records observations of the home environment centered on how the mother acts to the child (i.e. how attentive, warm, punitive) as well as the home itself (i.e. rooms are dark, level of clutter, safety of environment). A full questionnaire for the HOME assessment can be found in an online appendix.

Previous literature has used HOME scores to account for parental investments including Guo and Harris (2000), Gennetian (2005), Ruhm (2008), Todd and Wolpin (2007), and Carneiro and Ginja (2016). Todd and Wolpin (2007) use the HOME score to assess how the time and good inputs provided in the home vary by race and lead to persistent inequality. Carneiro and Ginja (2016) use the HOME assessment to explore how changes in parental inputs react to changes in family income.

Higher HOME scores in the cognitive and emotional dimensions imply a more stimulating or engaged home environment. I use raw scores for a composite HOME score, a cognitive score, and an emotional score. Since most questions are posed to the mother or recorded based on the mother's actions, the HOME score proxies for maternal investment in this study. I use a standardized measure of scores in estimation to ease interpretation.

c. Parenting Style

Parenting style is measured in a variety of different ways in the literature. Doepke and Zilibotti (2017), for instance, define three parenting styles using two questions from the NLSY97 dataset. A parent is either (1) permissive if the child reports the parent as "supportive" yet "not strict," (2) authoritative if the parent is described as "supportive" and "strict", and (3) authoritarian if the child identifies that parent as "not supportive" yet "strict/demanding."

Falk et. al. (2017) collect German household data to explore determinants of inequalities in IQ scores and economic preferences in children from different socioeconomic backgrounds. They include parental investment, and parenting style, specifically, as one such determinant. The authors define parenting style as a latent variable based on (1) parental warmth, (2) parental psychological behavior or control over their child, and (3) parental monitoring of child.

Del Bono et. al. (2016) measure parenting style using a principle component analysis approach. They gather information on the child's routines including regular bedtime, mealtimes as well as permissions for television and computer use. These questions target different age ranges where the mealtimes is asked of younger children (age 3) while information on computer time is gathered for older children (ages 5-7).

As the variables used in Doepke and Zilibotti (2017) do not exist for the NLSY79YA, I follow Falk et. al. (2017) and Del Bono et. al. (2016) to construct two measures of parenting style using available data in the NLSY79 and NLSY79YA. Based on the former, I proxy parental warmth with a variable describing how often the mother praises her child. I use three variables to assess parental behavior or control over the child including how often the child is spanked, grounded, and punished (for low grades). The former two variables are measured over the past week (i.e. how many times did the mother spank the child over the last week) while the latter is asked as a hypothetical (if child receives low grades, mother would punish). I use two variables to measure parental monitoring. For the first, I use a variable which asks how often mother knows where child is when she is not home. The responses can be "often," "sometimes," or "hardly ever." The second question

asks the child whether there are any rules in place to keep parents informed of whereabouts. The answer is a binary "yes" or "no."

Using the NLSY79 data to replicate the Del Bono et. al. (2016) measure for parenting style, I use variables asking the child's bedtime and limits to television consumption and computer games. To proxy for meals, I use variables asking how often the child eats fruits or vegetables and how often the child eats with mom and dad. While these are not perfect matches for the variables in Del Bono et. al.'s (2016) study, they do provide insight into how healthy the child eats and the regularity of family meals.

d. Descriptive Statistics

Summary statistics for our sample are reported in Table 1. The children's PIAT scores are reported as percentiles. The PPVT score falls below the 50th percentile as the average child scores in the 37th percentile while children in the sample score just into the third quartile for the three other PIAT tests. Non-cognitive measures are, on average, relatively similar between mothers and their children, yet mothers have higher self-esteem.

The distribution of test scores is presented in Figures 1 and 1a. In Figure 1, the children's cognitive and non-cognitive scores are shown. Reading Recognition scores are the closest to normally distributed among the scores. Reading Comprehension and Picture Vocabulary distributions are unimodal and slightly left skewed. Mathematics scores are bimodal with low values creating a left skew. Non-cognitive skills are less normal and show multimodal distributions. In contrast, Figure 1a shows that the mother's Pearlin Mastery score distribution is bell-shaped while the mother's cognitive scores, as measured by the AFQT, is right-skewed.

For parenting style, parents praise their children generously. Even accounting for outliers, nearly 9,000 parents surveyed praise their children about 9.4 times per week, on average. The two variables that measure parental monitoring are recoded into binary variables such that 64% of parents have rules about knowing where the child is while only 39% of parents know where their child is "often." Parents do punish their children. For instance, parents respond that they are more likely to punish their children for low grades than not to punish using a 5-point Likert scale. Mothers also spank their child on more than two occasions in a sample week and ground their child about one time, on average (Table 1)

Only 19% of the children in our sample attended daycare at some point in their childhood while 38% attended pre-school. About one quarter of our sample is the first born and 9% would be considered premature babies (reported birthweight less than 5.5 pounds). Both mother and child have a little more than a high school education. Children are earlier in their income trajectory and earn a permanent income of $36,636 while mothers who are later into their careers earn significantly more at $63,086. In terms of sample demographics, 71% of the child sample is a white male.

The inclusion of maternal investments into the children's production function necessitates the consideration of the children's age at the point of cognitive

assessment versus the timing of maternal inputs. In my sample, children are rolled into the CNLSY79/NLSY79YA survey based on their date of birth. Therefore, there is a wide range of child ages in any given wave of the survey and many children are not yet born in the first wave of the data in 1986. In 1986, the oldest child in the sample is 20 years old. By 2016, children in the sample range from 25 to 50. Earlier estimates of both cognitive scores and maternal investments will be most relevant to this study. Looking at Figure 2, more children take the PIAT Math exam from the years 1988 to 1998 than in the surrounding years with a notable drop off (to N=1) in 2008.

Maternal inputs, or HOME scores in estimation, must precede the cognitive tests by some amount of time in order to assess how home environment impacts cognitive ability. Descriptive statistics are reported for HOME scores by year and category in Table 1A. Columns 1 and 8 show the number of observed HOME scores by year and dimension alongside averages and standard deviations of each. Valid measurements face a fairly steep drop off between the 1998 and 2000 surveys. In the latter survey, children are 15 years old on average and range from 7 to 30. This implies that all children in our sample have aged through the first two categories of the HOME assessment (0-2, 3-5 years old).

In order to assess the impact of maternal inputs on cognitive test scores, I construct an age-adjusted variable for HOME scores. Since children enter the sample on a rolling basis, age ranges of children vary considerably each year. Therefore, I create variables that to capture HOME scores when (1) children are 0-2, (2) children are 3-5, (3) children are 6-9 and (4) children 10 and older. The surveys differ so these categories are meaningful in terms of the data but they also represent early childhood for babies and young toddlers, preschool years, and early versus later school aged years.

Figure 2 shows the distribution of HOME scores using kernel density estimates. Each composite score is unimodal with a slight left skew. The HOME score for children 10 and older is slightly less precise and could be attributed to a smaller sample of children having reported score for the older HOME assessment. Figure 2a decomposes the HOME scores into the cognitive and emotional dimensions. The density estimates show similarly unimodal distributions with a slightly higher cognitive median as compared to the emotional score.

The following section outlines the methodology used to estimate the data.

IV. Methodology

a) Benchmark Models

Intergenerational Persistence of Skills

Following Solon (1999), intergenerational income elasticities can be found using the following model:

$$Y_{0i} = \alpha + \beta Y_{pi} + \theta X_i + \rho X_{pi} + u_i \quad (1)$$

Where *Y* represents child i's permanent income. The intergenerational income elasticity is captured by β such that the higher the coefficient, the more the child's income is pre-determined by his or her parent's income. Age controls, and their square, are included in estimation for both mother and child and are represented by *X* in equation 1.

This model can be adapted to measure the intergenerational persistence of cognitive and non-cognitive skills such that:

$$C_{0i} = \alpha + \beta C_{pi} + \theta X_i + \rho X_{pi} + u_i \quad (1a)$$

$$or$$

$$NC_{0i} = \alpha + \beta NC_{pi} + \theta X_i + \rho X_{pi} + u_i \quad (1b)$$

where C is measured as test scores and NC is measured as non-cognitive test scores. I use these models to assess the direct impact of mother's skills on child's skills.

b) Maternal Time Investment and Child Outcomes

To test the impact of maternal time investment on child outcomes, I estimate early child development production functions developed by Todd and Wolpin (2003, 2007) and in line with past work in this area (see, for instance, Del Bono et. al. 2016, Fiorini and Keane 2014, Del Boca et. al. 2012). This approach allows me to assess the payoff of previous maternal investments in terms of cognitive and non-cognitive outcomes.

Prior to employing the CVA model, I estimate a simple benchmark model to explore the impact of maternal investment on child outcomes with the inclusion of a range of determinants. The basic model can be written as:

$$C_{ia} = \sum_{t=0}^{a} H_{a-t}\beta_{a-t} + \sum_{t=0}^{a} P_{a-t}\gamma_{a-t} + X_i + \varepsilon_{ia} \quad (2)$$

Lagged values of maternal investments (HOME scores), *H*, parenting inputs, *P*, determine current child outcomes. In estimation, *H* can be further decomposed in emotional versus cognitive scores while *P* can be broken into parenting style and non-maternal care. Further, a range of birth characteristics, demographics, and family structure information, *X*, are included and ε_{ia} represents the error term which capture unobservables.

Since the benchmark model suffers from endogeneity, I use a cumulative value added, or CVA, model which uses lagged inputs (past test scores) to address potential identification issues in estimating the impact of maternal investments on the child's cognitive scores. The production function for cognitive skills, *C*, for child *i* at age *a* be written as follows:

$$C_{ia} = \sum_{t=0}^{a} H_{a-t}\beta_{a-t} + \sum_{t=0}^{a} P_{a-t}\gamma_{a-t} + \delta C_{ia-1} + \omega X_i + \varepsilon_{ia} \quad (2a)$$

This model includes a lagged test score measure, C_{ia-1}, which allows me to account for endogeneity arising from omitted variable bias and reverse causality. The former is likely to occur because we cannot observe all determinants of a child's cognitive (and non-cognitive) skills. The latter could arise if the mother's

time spent and level of engagement is as a result of the child's skills. A mother could increase a child's cognitive scores by practicing the alphabet and numbers more frequently. However, a smarter child could request such activities more often as well.

The CVA model also applies to non-cognitive skills and can be rewritten as:

$$NC_{ia} = \sum_{t=0}^{a} H_{a-t}\beta_{a-t} + \sum_{t=0}^{a} P_{a-t}\gamma_{a-t} + \delta NC_{ia-1} + \omega X_i + \varepsilon_{ia} \qquad (2b)$$

Where NC_{ia} represents non-cognitive skills and NC_{ia-1} represents it's lagged value.

c) Intergenerational Mobility and Maternal Investments

Intergenerational mobility and maternal investments separately impact children's cognitive skills, yet maternal inputs may also intermediate the direct transmission of skills from mother to child.

Using the model from (2a) and (2b), I first add a component to capture intergenerational mobility.

$$C_{ia} = \sum_{t=0}^{a} H_{a-t}\beta_{a-t} + \sum_{t=0}^{a} P_{a-t}\gamma_{a-t} + \delta C_{ia-1} + \theta PC_i + \omega X_i + \varepsilon_{ia} \qquad (3)$$

Where PC_i represents parental skills and θ captures the direct transmission of skills between mothers and their children. In this model, θ is the intergenerational elasticity of skills. Based on past research, one would expect both $\beta_{a-t}>0$ and $\theta>0$ such that there is a positive return to maternal investments and some level of skills transmitted from one generation to the next. However, I am interested in measuring how maternal inputs intermediate the impact the mother's skills on the child's skills.

$$C_{ia} = \sum_{t=0}^{a} H_{a-t}\beta_{a-t} + \sum_{t=0}^{a} P_{a-t}\gamma_{a-t} + \delta C_{ia-1} + \theta C_{pi} + \pi H_{a-t} \times PC_i + \omega X_i + \varepsilon_{ia} \qquad (3A)$$

Where π captures the indirect channel through which maternal investments impacts children's skills. A positive value, $\pi>0$, would imply that higher maternal investments yield lead to a higher persistence of skills between generations.

In the next section, I test these models to assess the level and significance of the impact of maternal investments and parental skills on childhood skills.

V. Results

a) Benchmark estimates

Intergenerational Mobility

To begin, I run a series of benchmark estimates with my sample to compare against previous literature. All estimates are based on the model depicted in Equation 1. Table 2 shows a series of intergenerational mobility estimates including intergenerational elasticity of income (column 1), cognitive skills (columns 2-5), and non-cognitive skills (columns 6-7). Intergenerational income elasticities, though not particularly relevant to this study, provide validity of the sample. The reported

estimate of intergenerational income persistence is 0.4, which is right in line with previous literature (see Black and Devereux, 2011 and Solon, 1999). Estimates for intergenerational persistence of cognitive skills are significant at the 1 percent level.

Using each of the four PIAT scores (PPVT Vocabulary Test, PIAT Math, PIAT Reading Recognition, and PIAT Reading Comprehension), the intergenerational elasticity of skills with mother ranges from 0.25 to 0.29. For ease of comprehension, all skills are standardized in estimation. This implies a one standard deviation increase in the mother's AFQT scores results in a 0.29 standard deviation increase in the child's PIAT Reading (Recognition or Comprehension) score.

The intergenerational persistence of non-cognitive skills is weaker. While the elasticity between mother's and child's self-esteem is marginally significant, the intergenerational persistence based on the locus of control is zero. These results are consistent with previous research such as Kourtellos et. al. (2020), Durlauf et. al. (2017), and Blanden (2013) who find a stronger persistence of cognitive skills as compared to a lower, or no significant, persistence of non-cognitive skills.

These results allow us to observe that there is a role for skills in determining children's cognitive and non-cognitive skills, yet it is not complete. Therefore, I explore the role of maternal investments in determining children's skills in the next section.

Maternal Investment

Benchmark impact of HOME scores on cognitive outcomes

In this section, I explore the impact of the maternal inputs on the child's cognitive scores. Using a simple ordinary least squares model, I estimate benchmark models exploring the relationship between HOME scores and cognitive scores. Results are reported in Tables 3A and 3B.

In estimation, PIAT assessment scores are measured as the average lifetime assessment score to capture true cognitive ability. HOME scores are measured for different age categories as detailed in Section III. For the youngest children, maternal inputs positively and significantly impact the child's subsequent PIAT Math scores as seen in Table 3A, columns 1 through 3. A one standard deviation increase in a mother's cognitive stimulation HOME score, for instance, increases the child's PIAT Math score by 0.04 standard deviations. This impact is significant at the one percent level. Columns 4 through 6 show that maternal inputs made in the earliest years do not impact Picture Vocabulary (PPVT) scores. This is result could be due to omitted variables in the simplified model.

Maternal inputs in later childhood (preschool years *and* early school-aged years) have a stronger impact on cognitive scores. For school aged children, a one standard deviation increase in HOME scores increases the child's PIAT math scores by 0.34 standard deviations and PPVT scores by 0.21 standard deviations. The impact of HOME scores grows, rather than diminishes, throughout early childhood based on these results.

Table 3B shows that maternal inputs have a highly significant and positive impact on the child's PIAT Reading (Recognition and Comprehension) scores for

children of all explored ages. HOME scores, both cognitive and emotional, continue to have a larger impact on the child's cognitive test scores in the early school years as compared to maternal investments made during a child's infancy or preschool years. This counters past research such as Carneiro and Rodrigues (2009) who find that maternal investments made during preschool years (ages 3 to 6) yield the highest returns.

"While still positive and highly significant, the magnitude of the impact of a mother's cognitive investment decreases by more than half from young school aged to older school aged children."

Table 3C does show that the impact of HOME inputs on cognitive scores falls as children age beyond younger school years and into the 10 plus age group. The top panel shows that, while still positive and highly significant, the magnitude of the impact of a mother's cognitive investment decreases by more than half from young school aged to older school aged children. The magnitude of the impact is still approximately equal to the effect of HOME investments on the cognitive skill of preschoolers. Notably, the sample size falls significantly in the 10 plus age group as sample sizes go from 4700 to 5682 in early years to 406 in for the older children.

However, these results should be interpreted with caution since the model suffers from endogeneity. In the next section, I deal with endogeneity arising from omitted variables by adopting a more comprehensive model as seen in Del Bono et. al. (2016).

Including Controls in the Model to Assess Maternal Inputs on Cognitive Scores Following Del Bono et. al. (2016)

In Table 4, I estimate the impact of maternal inputs on the child's cognitive scores with the inclusion of controls as specified in Equation (2). Following Del Bono et. al. (2016), I include indicators for non-maternal care (daycare or preschool attendance), family structure (birth order, only child, single mother), information about the mother (mother age at birth and its square, mother's education), and information about the child (demographics, birthweight, premature status).

Tables 4A and 4B focus on the preschool and early elementary aged children, respectively. The results show that maternal inputs- measured at the composite, cognitive, or emotional HOME score- matter. The results are stronger in both magnitude and significance for the early elementary school children. A one standard deviation increase HOME scores during early elementary years leads to a 0.29 standard deviation increase in reading scores (Table 4B, Column 1) as compared to 0.17 if maternal investments are made during preschool (Table 4A, Column 1). However, the impact of emotional stimulation is nearly identical for both preschool and early elementary children. The effect of HOME score on Math and Picture Vocabulary Achievement are similar to their reading counterparts in significance though slightly lower in magnitude.

Birth characteristics appear to matter as a higher birthweight increases cognitive scores and those who weigh less than 5.5 pounds at birth have lower skills.[1] Children born later in the birth order have lower cognitive skills. The mother's age at birth also significantly impacts cognitive skills such that older mothers have smarter children, yet the effect increases at a decreasing rate. This implies that a mother birthing a child at age 22 versus 23 yields a stronger difference in children's

[3] Results for the impact of maternal inputs on cognitive scores can be found in an online appendix.

cognitive skills than at 32 versus 33 years old. A single mom raises a child with lower test scores, yet this only appears significant for elementary school children (Table 4B). Similar to past work, more educated mothers raise smarter children.

Looking at Table 4C, HOME scores also impact a child's non-cognitive scores. While maternal investments impact self-esteem and locus of control positively and significantly for all children aged 3-9, the results are stronger for the elementary school children. The impact of maternal inputs on self-esteem and locus of control is stronger than the impact of HOME scores on math and picture vocabulary scores but not as strong as the impact of maternal investments on reading scores. Interestingly, a mother's emotional stimulation does not have a stronger impact on non-cognitive scores than cognitive stimulation (Columns 3 and 6). Birth order does not appear to impact self-esteem or mastery, yet only children have higher non-cognitive skills based on this model. Similarly, preschool has a strong impact on non-cognitive achievement. A child who attends preschool can expect a 0.2 standard deviation increase in non-cognitive scores. Overall, the model for non-cognitive skills is not as strong as that for cognitive skills.

Results suggest that the impact of HOME scores on cognitive scores for the youngest children (0-2) is not a strong indicator of subsequent cognitive outcomes.[2] This could be that (1) maternal investments do not matter for babies and young toddlers, (2) HOME scores do not adequately capture maternal investments and other variables used in the literature such as the number of week that the mother breastfeeds or whether the mother smokes during pregnancy such as in Carneiro et. al. (2013) are more important, or (3) there is error in estimation.

The impact of maternal investments on *older* children's cognitive scores (aged 10 and above) continues to be positive and highly significant. However, few of the other controls impact cognitive scores in this model, calling to question its validity.[3]

In Tables 5A through 5C, I include a series of indicators for parenting style to assess its impact of cognitive skills directly and indirectly through HOME scores. While continuing to control for birth characteristics, non-maternal care, and family structure as in Tables 4A through 4C, I find maternal investments continue to significantly impact child outcomes beyond parenting styles. In Table 5A, I use indicators proposed in Falk et. al. (2017) to measure parenting style including variables describing parental warmth, behavioral control, and monitoring. There is strong evidence that parental monitoring matters, particularly for cognitive skills. A household with rules about knowing where the child is increases the child's cognitive scores by 0.9 (Table 5A, Column 2) to 1.3 (Column 7) standard deviations. There is some evidence that parental behavior control matters as children who are grounded by parents have lower cognitive scores and children who are punished for low grades have lower non-cognitive scores.

"There is some evidence that parental behavior control matters as children who are grounded by parents have lower cognitive scores and children whoa re punished for low grades have lower non-cognitive scores."

In Table 5C, I adopt the parenting style measures set forth in Del Bono et. al. (2016). There is some evidence that mealtime (particularly the consumption of healthy foods) and bedtime impact cognitive and non-cognitive scores, yet the results are sensitive to the specification. Interestingly, these results show that a

[2] The results for the impact of maternal inputs on cognitive scores are not recorded in this paper but can be found in an online appendix. Overall, HOME scores do not significantly impact child cognitive test scores using the specification recorded in Table 4.

[3] Results for the impact of maternal inputs on cognitive scores can be found in an online appendix.

child who plays video games on the computer has higher cognitive and non-cognitive scores. These models could suffer from endogeneity. Therefore, I will deal with the bias by adopting the CVA model in a following section.

Intergenerational Mobility and Maternal Inputs in the Child Production Function

Before I measure the CVA model, I explore the benchmark model described in Equation 2C. These results are reported in Table 6 and show that HOME scores continue to positively and significantly impact skills when accounting for intergenerational transmission of skills, specifically for early elementary children. With the full range of variables used in Table 5, I find that intergenerational elasticity of cognitive skills ranges from 0.13 to 0.18 for preschool and early elementary school children. This decreases from an intergenerational elasticity of 0.29 in Table 2.

Intergenerational transmission of non-cognitive skills is both larger in magnitude and significance, particularly for children aged 6-9 (Table 6, Panel B). Table 3 shows the persistence of self-esteem is 0.03 and the persistence of locus of control from mothers to their children is zero using the full sample. Looking at Table 6, a 1 standard deviation increase in a mother's Rosenberg Self-Esteem score yields a 0.05 to 0.06 standard deviation increase in her child's score. This is significant at the one percent level. The intergenerational persistence of Pearlin Mastery scores is also positive (0.04) and significant at the 5 percent level for both preschool and early elementary school children.

The impact of maternal inputs on non-cognitive skills does decrease and even disappear for preschool children (Columns 5-6). However, this could be due to omitted variables. In the next section, I estimate the CVA Model to account for endogeneity arising from omitted variable bias and reverse causality.

Cumulative Value Added Model

Based on Del Bono et. al. (2016), I estimate a CVA model which includes a one-period lagged skill in estimation. The core rationale for adopting this model from Todd and Wolpin (2003, 2007) and Del Bono et. al. (2016) is that there are unobservables that may bias our estimates and a lagged input can eliminate such bias. This specification is based on Equation 3 and continues to include birth characteristics, non-maternal care, family structure and demographics in estimation. Table 7 shows the results of the CVA Model for each of the four age groups.

As consistent with the previous findings of this study, the impact of maternal inputs during the earliest childhood years (ages 0-2) has a weak impact on cognitive and non-cognitive skills. However, the impact of HOME scores on cognitive and non-cognitive skills remain strong for both the preschool and early elementary school children. This implies that maternal investments made in the child during ages 3 to 9 increase subsequent cognitive skills by 0.09.

The impact of maternal investments on PIAT Reading scores continues to be the largest in magnitude of the four cognitive tests. Reading plays a central role in the construction of HOME scores. Many of the HOME score assessment questions

ask the mother about her reading habits with the child, the amount of books in the home, and the frequency with which the child is exposed to books outside the home (i.e. trips to the library). This impact is larger for early elementary school children as compared to preschool children. However, a child's achievements in early language, as measured by PPVT, seem equally impacted by investments made during preschool and early education years.

By implementing the CVA model, the impact of maternal inputs on children's skills do not change significantly. Looking from Table 5 to Table 7, HOME scores remain statistically equal with the magnitude of the impact of maternal investments slightly falling for cognitive skills and increasing for non-cognitive skills.

Results are not reliable for the older children (age 10 and older) due to sample size.

As a validity measure, the lagged input is positive and significant for all children. This is important since past test scores should impact future test scores, if the measurement is an indicator of cognitive or non-cognitive ability.

Interacting Intergenerational Mobility and Maternal Inputs

In this section I look at how intergenerational mobility impacts and maternal inputs impact cognitive and non-cognitive scores using a CVA model. Based on Equation 3, I look at how maternal skills and inputs impact children's skills while continuing to specify a model that includes parenting style, non-maternal care, family structure, and demographics. Results from estimation appear in Table 8A.

Maternal inputs and parental skills positively and significantly impact cognitive and non-cognitive skills for early elementary school children. The impact of maternal investments does decrease with the inclusion of the intergenerational elasticity measure, but not significantly. However, the impact on children's vocabulary falls to zero. However, HOME scores remain marginally significant on PPVT scores for the younger children and the test is an assessment built for younger children first acquiring language. For the younger children (ages 3-5), a mother's investments during the preschool years do not appear to impact subsequent math achievement. While HOME assessments do gather information on whether the mother helps the child learn numbers and other early quantitative skills, the PIAT Math achievement test does assess a child's attainment in mathematics as *school*, including subject matter as advanced as geometry and trigonometry. Later maternal investments do appear to significantly pay off in math scores (Panel B, Column 3)

As in our baseline (Table 2), Table 8A shows that the intergenerational persistence of non-cognitive skills is weaker than that of cognitive skills. There is no role for the impact of maternal self-esteem on the child's self-esteem beyond maternal home investments (Column 5). Maternal investments do not show the same pattern and HOME scores show to have a positive and highly significant impact on the early elementary school children's locus of control (Panel B, Column 6)

Finally, I estimate an indirect channel through which maternal inputs impact children's cognitive and non-cognitive skills. Using Equation 3a, I explore whether

HOME scores affect skills by impacting the transmission of skills between mothers and their children. In other words, this practice seeks to better understand whether the strength of mobility of skills is impacted by maternal investments. Do more invested mothers have a higher transmission of skills to their children? Table 8B shows the results.

Overall, there is weak evidence that maternal home score interact with the mother's skills to determine the child's skills. For our strongest indicators, PIAT Reading Recognition and Pearlin Mastery, there is marginal evidence that maternal investments weaken or strengthen the impact of maternal skills on children's skills, respectively. Table 8B, Column 1 shows that higher maternal investments decrease the impact of the mother's cognitive skills on the child's reading scores. On the other hand, more maternal investment strengthens the impact of a mother's mastery on her child's mastery (Column 6). This is consistent with past work that shows non-cognitive skills are more learned from the environment than genetically transferred. However, more work should be done to better understand the mobility implications of these results. Ideas for future work are outlined in the next section.

VI. Discussion and Conclusion

Overall, there is evidence that maternal inputs matter. Using a CVA model from Todd and Wolpin (2003, 2007) and adapted as in Del Bono et. al. (2016), I show that maternal investments increase children's skills. By including a one period lagged test score in the model, I am able to account for possible endogeneity that arises from omitted variable bias or reverse causality in determining the impact of maternal investments on both cognitive and non-cognitive skills.

Results show that maternal investments positively and significantly impact a child's skills. Reading scores, specifically reading recognition, prove to yield the strongest returns to maternal investment in the cognitive sphere while a child's locus of control is most impacted by maternal inputs. Measuring maternal inputs using the NLSY's Home Observation of the Environment (HOME) scores, I find that a one standard deviation increase in HOME scores leads to a 0.18 to 0.27 increase in these cognitive and non-cognitive skills, respectively, in the CVA model. Maternal investments made during early elementary years also significantly impact a child's subsequent math scores and self-esteem while those made during preschool years significantly increase vocabulary scores.

" Maternal investments made during early elementary years also significantly impact a child's subsequent math scores and self-esteem while those made during preschool years significantly increase vocabulary scores. "

The direct transmission of cognitive skills between mothers and early elementary children is positive and highly significant. Mothers' AFQT scores predict a child's subsequent reading, math, and picture vocabulary scores. A mother's locus of control impacts her child's mastery, yet the self-esteem channel is not significant. I estimate the indirect channel through which maternal investment impacts her child's skills by interacting the maternal skills and maternal inputs. However, there is only marginal evidence that maternal investments intermediate the direct transmission of skills.

This study confirms results found in past work such that parenting style matters. Children who are more closely monitored, for instance, have higher skills. Further, there is evidence that birth characteristics, non-maternal care (particularly preschool), family structure, and demographics impact skills.

Overall, results are the strongest for early elementary school aged children (6-9 years) with meaningful results for preschool aged children (3-5 years) as well. Maternal time investments increase a child's skills. Results are not strong for the youngest (0-2 years) or oldest (10 years and older) groups.

Future work in this area is merited. To further explore an indirect channel of maternal inputs on skills through parents' skills, I will look to incorporate meaningful thresholds to better inform the effect on mobility. For instance, does maternal investment create more cognitive mobility for children from mothers with lower cognitive skills? This seems to be a more relevant policy question since it implies that maternal investments can make up for some of negative child outcomes born from parental endowments.

I will also consider how disaggregated maternal inputs, rather than composite HOME scores, impact cognitive *and* non-cognitive outcomes. I will further explore the impact of parenting style on cognitive scores, and its interaction with maternal inputs. For one, I plan to create a parenting style indicator using principle component analysis as in Del Bono et. al. (2016)

Further study will also include a two-period lagged outcome as an instrumental variable to account for endogeneity that arises from measurement error. Our selected variables could also suffer from measurement error. Many of the HOME scores, for instance, are asked for the parents to recall over the past week or based on administrator observations during the course of the interview. Such error appears in the error term, yet the inclusion of two-period lagged cognitive scores to serve as an instrument to deal with such bias.

Results to date confirm that maternal investments in children matter for outcomes. Future work will further test the robustness and explore policy implications of this relationship.

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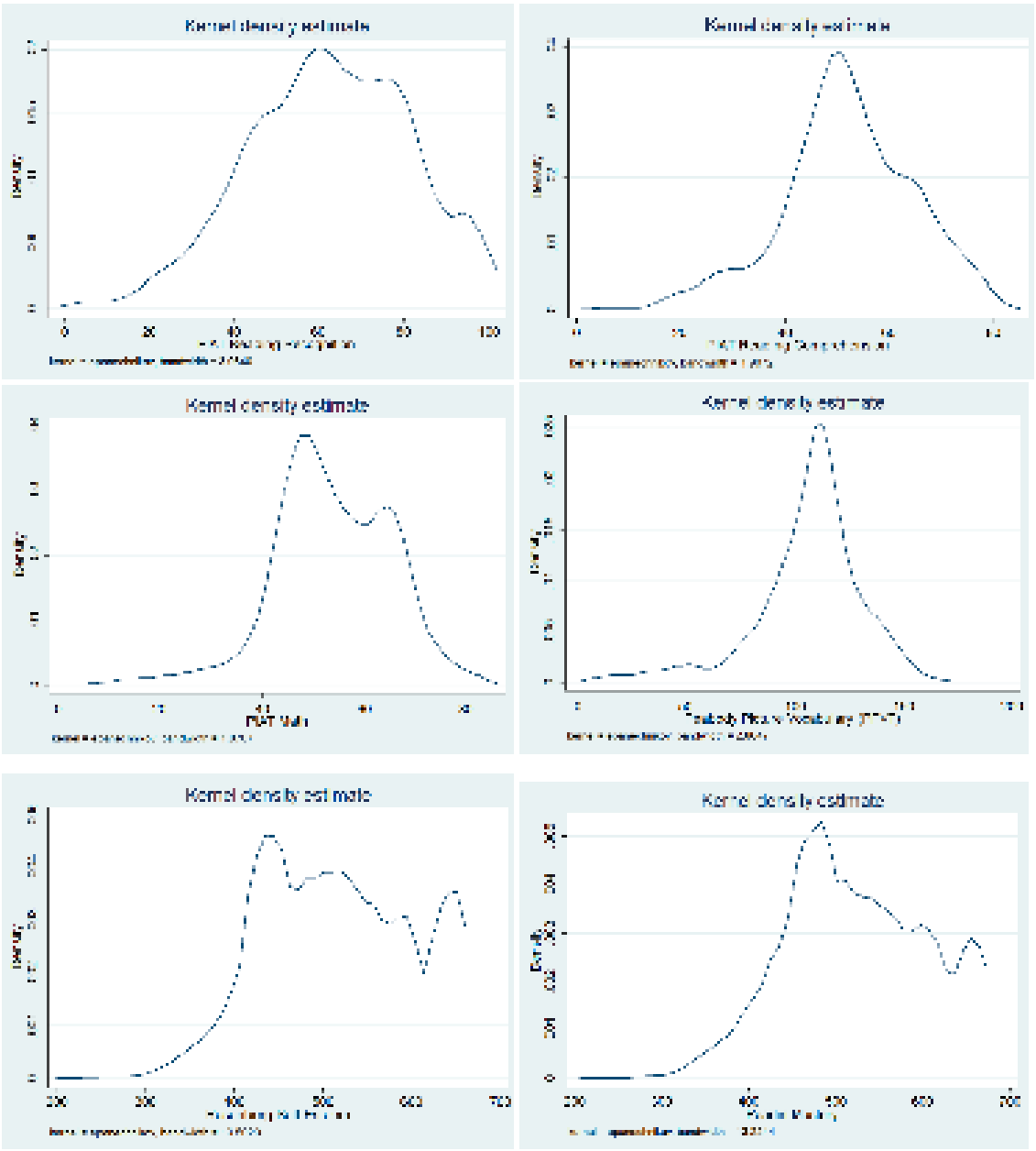
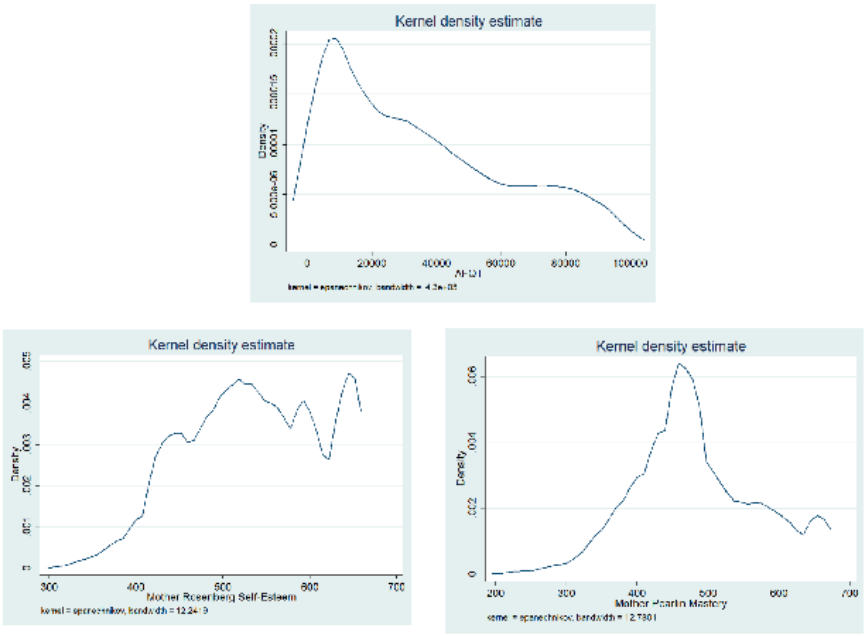
VIII. Tables and Figures

Figure 1: Cognitive and Non-Cognitive Test Score Distributions



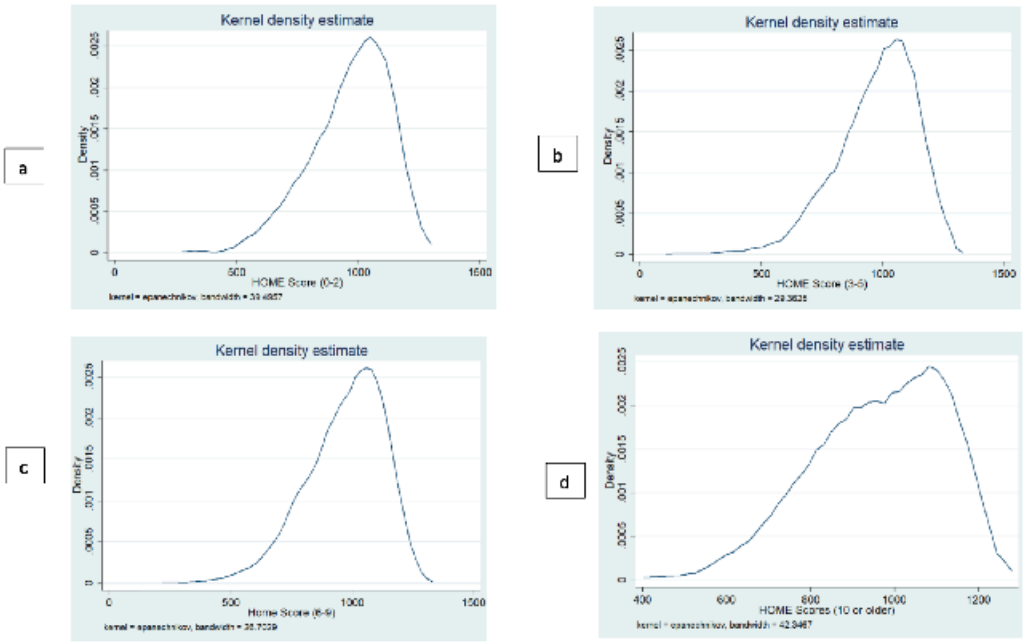
Cognitive test scores are depicted as kernel density estimates. Scores are measured using the Peabody Individual Achievement (PIAT) tests. Non-cognitive tests scores are taken from the Rosenberg Self-Esteem and Pearlin Mastery Scale (measuring locus of control), respectively. Raw scores drawn from the CNLSY79/NLSY79YA are depicted. The average test score of available scores to create each measure.

Figure 1a: Mother's Cognitive and Non-Cognitive Scores Distributions



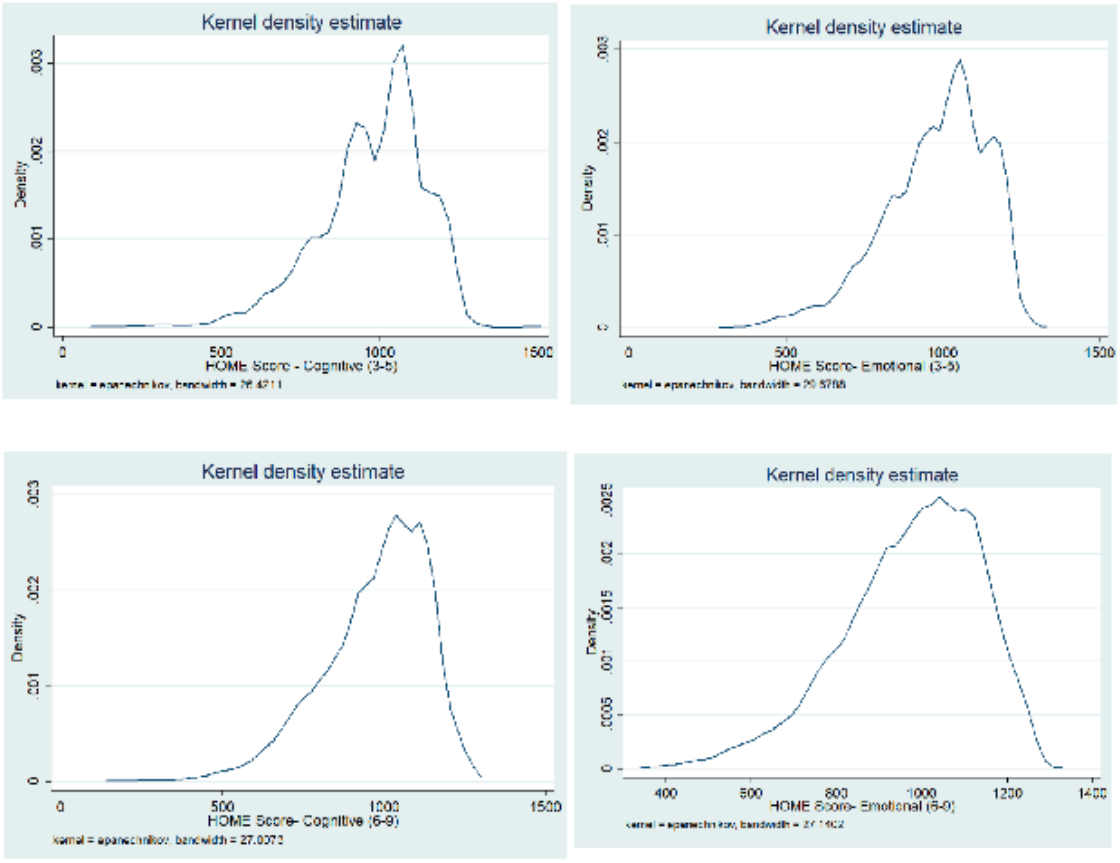
Cognitive test scores are depicted as kernel density estimates. Scores are measured using the Armed Forces Qualification (AFQT) tests. Non-cognitive tests scores are taken from the Rosenberg Self-Esteem and Pearlin Mastery Scale (measuring locus of control), respectively. Raw scores drawn from the NLSY79 are depicted. The average test score of available scores to create each measure.

Figure 2: Home Observation of the Environment (HOME) Scores Distributions



Each panel is a kernel density estimate of the composite HOME scores. Panel a shows the distribution of scores for the youngest survey administered to mothers of children age 0-2. Panel b shows the kernel density estimate for HOME score of children ages 3-5 while panel c and d show HOME score distributions for children aged 6-9 and 10 and older, respectively.

Figure 2a: Cognitive and Emotional Scores



Each panel is a kernel density estimate of the HOME scores. Panels a and b show the distribution of scores for the youngest survey administered to mothers of children age 3-5. Panel a illustrates the distribution of cognitive scores while Panel b shows the kernel density estimate for HOME emotional scores. Panels c and d depict the kernel density estimate of children ages 6-9 where panel c shows the HOME cognitive score distribution and panel d shows the HOME emotional score distribution..

Table 1A: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Cognitive Skills					
Peabody Achievement Scores					
Math	6095	54.95	31.55	0	99
Picture Vocabulary	6095	57.35	32.98	0	99
Reading Comprehension	6095	53.17	31.99	0	99
Reading Recognition	6095	56.26	25.85	0	99
AFQT (Mother)	5857	34814.57	26080.71	1	110010
Non Cognitive Skills					
Rosenberg Self-Esteem Score	6095	467.22	171.45	0	647
Rosenberg Self-Esteem Score (**Mother**)	6095	585.49	79.76	0	647
Pearlin Mastery Score	6095	474.16	172.56	0	661
Pearlin Mastery Score (**Mother**)	6095	574.25	111.72	0	661
Parenting Style					
Falk et. al. (2017)					
Praise (in past week)	9259	18.78	81.96	0	999
Rules to Know Child Whereabouts	11545	0.64	0.48	0	1
Know Child Whereabout	11545	0.89	0.49	0	1
Punish (+low grades)	9224	8.92	1.51	1	5
Ground (in past week)	9284	1.28	11.05	0	999
Spank (in past week)	10348	2.64	5.19	0	222
Del Bono et. al. (2016)					
Eats Vegetables (Times Per Week)	8496	4.66	1.50	0	7
Eats Fruits (Times Per Week)	8496	4.26	1.49	0	7
How Often Uses Computer to Play Games	6426	2.96	1.20	0	6
Bedtime	19294	0.81	0.40	0	1
No Limit to TV or Video Games	19294	0.15	0.36	0	1
Child Decides How Much Television to Watch	19294	1.01	0.10	1	1
Non-Maternal Childcare					
Attend Preschool	19294	0.38	0.49	0	1
Attend Daycare	19294	0.19	0.39	0	1
Birth Characteristics					
Birthweight (Ounces)	10950	116.04	22.82	0	568
Only Child	19294	0.17	0.37	0	1
Premature (Birthweight <5.5 lbs)	10381	0.10	0.29	0	1
First Born	19294	0.26	0.44	0	1

Birth Order	11545	1.97	1.15	1	11
Mother Age at Birth	11539	25.24	5.96	11	50
Demographics					
Average Age	6095	28.70	2.24	25	44
Average Age (**Mother**)	6095	34.72	2.05	25	49
Age in 2016	6095	32.78	4.28	25.00	48.00
Age in 2016 (**Mother**)	6095	51.64	2.22	47	56
Years of Schooling	6095	13.03	2.29	3	20
Years of Schooling (**Mother**)	6095	13.30	2.63	2	20
Permanent Income	6095	36635.93	30360.25	33	304987
Permanent Income (**Mother**)	6095	63085.72	65409.58	1521	1861074
Hispanic	19294	0.12	0.32	0	1
Black	19294	0.17	0.37	0	1
Female	19294	0.29	0.46	0	1

Table 1B: Descriptive Statistics of HOME Scores

		HOME Score					*HOME Score: Emotional*			*Cognitive*	
Variable	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**	**Variable**	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
1986	3,004	968.32	159.47	281	1348	Emotional	3,110	976.30	158.15	367	1336
						Cognitive	3,004	968.32	159.47	281	1348
1988	4,130	967.20	157.78	251	1388	Emotional	3,699	975.87	158.66	360	1303
						Cognitive	3,682	969.84	157.99	221	1310
1990	4,283	966.30	161.74	332	1302	Emotional	3,994	974.72	161.39	352	1260
						Cognitive	4,315	971.07	161.13	211	1272
1992	4,994	965.78	162.66	137	1287	Emotional	4,390	974.13	161.09	315	1213
						Cognitive	4,817	969.72	161.29	111	1182
1994	4,481	967.87	162.61	214	1289	Emotional	4,047	975.38	160.47	247	1243
						Cognitive	4,305	970.45	161.88	198	1263
1996	3,581	966.37	163.05	245	1267	Emotional	3,271	975.90	162.80	308	1226
						Cognitive	3,440	971.73	161.39	167	1249
1998	2,996	968.51	157.44	232	1259	Emotional	2,594	973.24	161.47	232	1219
						Cognitive	2,763	954.70	155.62	244	1235
2000	1,802	976.87	167.85	80	1252	Emotional	1,687	983.51	159.35	65	1210
						Cognitive	1,698	978.76	166.73	336	1240
2002	6,095	253090 0.00	0.00	253090 900	253090 900	Emotional	6,095	253130 0.00	0.00	47432900	253131 900
						Cognitive	6,095	253110 0.00	0.00	25311100	25311 00
2004	902	971.29	156.48	401	1257	Emotional	730	984.93	155.81	413	1233
						Cognitive	821	965.29	159.36	492	1208
2006	406	962.13	176.42	344	1237	Emotional	322	964.47	154.96	462	1216
						Cognitive	381	956.99	169.91	371	1177
2008	1	935.00	.	935	935	Emotional	1	949.00	.	949	949
						Cognitive	1	959.00	.	959	959

Table 2: Intergenerational Persistence of Skills

Child	Income	PPVT Vocabulary Test	PIAT Math	PIAT Reading Recognition	PIAT Reading Comprehension	Rosenberg Self Esteem Score	Pearlin Mastery Score
Mother							
Income	0.395***						
	(24.37)						
AFQT		0.251***	0.276***	0.289***	0.290***		
		(20.82)	(23.45)	(24.66)	(24.61)		
Rosenberg Self-Esteem Score						0.0300*	
						(2.56)	
Pearlin Mastery Score							0.0216
							(1.59)
Constant		-27.14***	-25.48***	-25.03***	-26.02***	-36.24***	-36.78***
		(-12.54)	(-11.32)	(-12.12)	(-12.49)	(-15.34)	(-14.70)
N		5857	5857	5857	5857	6095	6095

t-statistics in parentheses (p<0.001, *** p<0.05, ** p<0.01,*)

Column headers are labeled with the dependent variable used in each regression while row headers are labeled as an independent variable used in the regression. Age controls and their squares are included in estimation but not reported. All variables are standardized. Reported coefficients are measured as intergenerational elasticities of income, cognitive skills, and non-cognitive skills. Standard errors are robust.

Table 3A: Maternal Inputs Impact of PIAT Math and Picture Vocabulary Assessment Scores

	(1) PIAT Math	(2) PIAT Math	(3) PIAT Math	(4) PPVT	(5) PPVT	(6) PPVT
Children 0-2						
HOME Score	0.0419***			0.00932		
	(5.78)			(1.35)		
HOME- Cognitive Score		0.0435***			0.0111	
		(6.14)			(1.63)	
Home- Emotional Score			0.0394***			0.0108
			(5.49)			(1.60)
N	*4718*	*4700*	*4663*	*4718*	*4700*	*4663*
Children 3-5						
HOME Score	0.158***			0.0645***		
	(17.38)			(6.98)		
HOME- Cognitive Score		0.159***			0.0657***	
		(17.71)			(7.19)	
Home- Emotional Score			0.152***			0.0658***
			(17.28)			(7.33)
N	*5682*	*5589*	*5405*	*5682*	*5589*	*5405*
Children 6-9						
HOME Score	0.340***			0.209***		
	(18.45)			(10.70)		
HOME- Cognitive Score		0.341***			0.212***	
		(18.73)			(10.96)	
Home- Emotional Score			0.322***			0.192***
			(17.90)			(10.06)
N	*5466*	*5218*	*5048*	*5466*	*5218*	*5048*

t-statistics in parentheses (p<0.001, *** p<0.05, ** p<0.01,*)

Column headers are labeled with the dependent variable used in each regression while row headers are labeled as an independent variable used in the regression. Age controls and their squares are included in estimation but not reported. HOME scores, cognitive and non-cognitive variables are standardized. Reported coefficients are measured as intergenerational elasticities of income, cognitive skills, and non-cognitive skills. Constants are included but not reported. Standard errors are robust.

Table 3B: Maternal Inputs Impact on PIAT Reading Achievement Scores

	(1) PIAT Reading Recognition (RR)	(2) PIAT RR	(3) PIAT RR	(4) PIAT Reading Comprehension (RC)	(5) PIAT RC	(6) PIAT RC
Children 0-2						
HOME Score	0.0648***			0.0407***		
	(8.65)			(5.63)		
HOME- Cognitive Score		0.0653***			0.0420***	
		(8.85)			(5.93)	
Home- Emotional Score			0.0627***			0.0397***
			(8.40)			(5.56)
N	4718	4700	4663	4718	4700	4663
Children 3-5						
HOME Score	0.169***			0.137***		
	(18.69)			(15.03)		
HOME- Cognitive Score		0.167***			0.137***	
		(18.52)			(15.08)	
Home- Emotional Score			0.164***			0.133***
			(18.58)			(14.95)
N	5682	5589	5405	5682	5589	5405
Children 6-9						
HOME Score	0.349***			0.319***		
	(21.13)			(16.94)		
HOME- Cognitive Score		0.347***			0.317***	
		(21.24)			(17.03)	
Home- Emotional Score			0.325***			0.297***
			(20.12)			(16.14)
N	5466	5218	5048	5466	5218	5048

Table 3C: Maternal Investments Impact on Cognitive Scores for Older Children (Ages > 9 Years Old)

	(1) PIAT Math	(2) PPVT	(3) PIAT Reading Recognition	(4) PIAT Reading Comprehension
HOME Score	0.207***	0.156***	0.170***	0.231***
	(6.38)	(4.44)	(5.37)	(7.08)
N	406	406	406	406

Tables 3B and 3C:

t-statistics in parentheses (p<0.001, *** p<0.05, ** p<0.01,*)

Column headers are labeled with the dependent variable used in each regression while row headers are labeled as an independent variable used in the regression. Age controls and their squares are included in estimation but not reported. HOME scores, cognitive and non-cognitive variables are standardized. Reported coefficients are measured as intergenerational elasticities of income, cognitive skills, and non-cognitive skills. Constants are included but not reported. Standard errors are robust.

Table 4A: Maternal Investments and HOME Scores with Controls
Children Ages 3-5

	(1) PIAT RR	(2) PIAT RR	(3) PIAT RR	(4) PIAT RC	(5) PIAT RC	(6) PIAT RC
HOME Scores	0.168***	0.109**	0.151***	0.132***	0.0804*	0.118***
	(5.04)	(3.18)	(4.72)	(4.26)	(2.53)	(4.02)
Birthweight	0.00154**	0.00173**	0.00162**	0.00152**	0.00177***	0.00179***
	(2.85)	(3.16)	(2.93)	(3.00)	(3.44)	(3.47)
Pre-Mature	-0.0428	-0.0573*	-0.0487	-0.0607**	-0.0754**	-0.0719**
	(-1.76)	(-2.34)	(-1.96)	(-2.64)	(-3.27)	(-3.10)
Birth Order	-0.0563***	-0.0659***	-0.0655***	-0.0608***	-0.0698***	-0.0665***
	(-3.84)	(-4.48)	(-4.54)	(-4.45)	(-5.10)	(-5.00)
Only Child	0.0122	0.0185	0.0168	-0.0344	-0.0356	-0.0399
	(0.36)	(0.54)	(0.48)	(-1.06)	(-1.09)	(-1.22)
Preschool	0.103**	0.115**	0.110**	0.126***	0.132***	0.131***
	(2.78)	(3.12)	(2.93)	(3.37)	(3.55)	(3.50)
Daycare	0.0394	0.0313	0.0336	-0.00617	-0.00979	-0.0140
	(1.30)	(1.03)	(1.09)	(-0.21)	(-0.34)	(-0.47)
Single Mother	0.0500	0.0446	0.0463	0.0156	0.00711	0.0138
	(1.62)	(1.43)	(1.45)	(0.54)	(0.25)	(0.47)
Mother Age at Birth	0.142**	0.140**	0.138**	-0.0372	-0.0397	-0.0561
	(2.97)	(2.93)	(2.97)	(-0.79)	(-0.85)	(-1.25)
Mother Age at Birth Squared	-0.00258**	-0.00250**	-0.00249**	0.000982	0.00106	0.00135
	(-2.90)	(-2.84)	(-2.87)	(1.12)	(1.22)	(1.59)
Mother's Education	0.0560***	0.0567***	0.0594***	0.0557***	0.0560***	0.0575***
	(8.86)	(9.18)	(9.43)	(9.21)	(9.58)	(9.78)
Female	0.133***	0.147***	0.131***	0.0703*	0.0807**	0.0761**
	(4.61)	(5.08)	(4.45)	(2.54)	(2.93)	(2.72)
Black	-0.196***	-0.227***	-0.180***	-0.266***	-0.295***	-0.255***
	(-5.35)	(-6.34)	(-4.95)	(-7.90)	(-9.00)	(-7.74)
Hispanic	-0.0443	-0.0420	-0.0675	-0.122**	-0.128**	-0.153***
	(-1.11)	(-1.04)	(-1.64)	(-3.11)	(-3.26)	(-3.81)
N	2914	2821	2637	2914	2821	2637

For Tables 4A and 4B:

t-statistics in parentheses (p<0.001, *** p<0.05, ** p<0.01,*)

Column headers are labeled with the dependent variable used in each regression while row headers are labeled as an independent variable used in the regression. Age controls and their squares are included in estimation but not reported. Income is logged in estimation while HOME scores, cognitive and non-cognitive variables are standardized. Reported coefficients are measured as intergenerational elasticities of income, cognitive skills, and non-cognitive skills. Constants are included but not reported. Standard errors are robust.

Table 4A (continued)

	(1) PIAT Math	(2) PIAT Math	(3) PIAT Math	(4) PPVT	(5) PPVT	(6) PPVT
HOME Scores	0.0883**	0.0622*	0.0669*	0.0663*	0.0451	0.0512
	(2.81)	(1.98)	(2.28)	(1.99)	(1.39)	(1.59)
Birthweight	0.00158**	0.00178**	0.00190***	0.00102	0.00115*	0.00114*
	(2.96)	(3.29)	(3.54)	(1.90)	(2.11)	(2.10)
Pre-Mature	-0.0624**	-0.0738**	-0.0794**	-0.0263	-0.0373	-0.0381
	(-2.59)	(-3.05)	(-3.29)	(-1.09)	(-1.53)	(-1.57)
Birth Order	-0.0267	-0.0348*	-0.0337*	-0.0346*	-0.0424**	-0.0377**
	(-1.91)	(-2.49)	(-2.49)	(-2.41)	(-2.95)	(-2.67)
Only Child	-0.0577	-0.0622	-0.0592	0.0502	0.0444	0.0535
	(-1.77)	(-1.89)	(-1.79)	(1.62)	(1.44)	(1.74)
Preschool	0.142***	0.147***	0.148***	0.168***	0.170***	0.184***
	(3.83)	(4.01)	(3.99)	(4.27)	(4.34)	(4.64)
Daycare	0.0276	0.0217	0.000964	-0.0312	-0.0307	-0.0498
	(0.94)	(0.74)	(0.03)	(-1.04)	(-1.03)	(-1.65)
Single Mother	0.0385	0.0356	0.0322	0.0133	0.00751	0.0166
	(1.31)	(1.22)	(1.09)	(0.45)	(0.26)	(0.57)
Mother Age at Birth	-0.0291	-0.0324	-0.0556	-0.115*	-0.121*	-0.124**
	(-0.62)	(-0.69)	(-1.25)	(-2.36)	(-2.52)	(-2.70)
Mother Age at Birth Squared	0.000924	0.00102	0.00144	0.00216*	0.00229*	0.00236**
	(1.05)	(1.17)	(1.73)	(2.37)	(2.55)	(2.72)
Mother's Education	0.0506***	0.0500***	0.0523***	0.0425***	0.0401***	0.0441***
	(8.24)	(8.50)	(8.79)	(6.89)	(6.67)	(7.31)
Female	-0.00430	0.00125	-0.00754	0.0294	0.0388	0.0292
	(-0.15)	(0.05)	(-0.27)	(1.04)	(1.37)	(1.03)
Black	-0.259***	-0.272***	-0.246***	-0.313***	-0.330***	-0.311***
	(-7.50)	(-8.11)	(-7.26)	(-8.83)	(-9.66)	(-9.02)
Hispanic	-0.172***	-0.181***	-0.205***	-0.265***	-0.270***	-0.290***
	(-4.44)	(-4.67)	(-5.23)	(-6.59)	(-6.72)	(-7.15)
N	2914	2821	2637	2914	2821	2637

For Tables 4A and 4B:

t-statistics in parentheses (p<0.001, *** p<0.05, ** p<0.01,*)

Column headers are labeled with the dependent variable used in each regression while row headers are labeled as an independent variable used in the regression. Age controls and their squares are included in estimation but not reported. Income is logged in estimation while HOME scores, cognitive and non-cognitive variables are standardized. Reported coefficients are measured as intergenerational elasticities of income, cognitive skills, and non-cognitive skills. Constants are included but not reported. Standard errors are robust.

Table 4B: Maternal Investments and HOME Scores with Controls
Children Ages 6-9

	(1) PIAT RR	(2) PIAT RR	(3) PIAT RR	(4) PIAT RC	(5) PIAT RC	(6) PIAT RC
HOME Scores	0.290***	0.267***	0.454***	0.273***	0.253***	0.412***
	(7.93)	(7.37)	(4.72)	(8.21)	(7.72)	(5.01)
Birthweight	0.00124***	0.00131***	0.00136***	0.00120***	0.00133***	0.00153***
	(3.04)	(3.16)	(3.31)	(3.00)	(3.55)	(4.00)
Pre-Mature	-0.0462*	-0.0535**	-0.0613**	-0.0497**	-0.0603***	-0.0719***
	(-2.45)	(-2.81)	(-3.21)	(-2.86)	(-3.50)	(-4.19)
Birth Order	-0.0728***	-0.0828***	-0.0917***	-0.0757***	-0.0782***	-0.0882***
	(-6.35)	(-6.80)	(-7.40)	(-6.80)	(-7.24)	(-7.99)
Only Child	0.0414	0.0385	0.0451	-0.00751	-0.0113	-0.0118
	(1.59)	(1.48)	(1.72)	(-0.31)	(-0.48)	(-0.48)
Preschool	0.123***	0.108**	0.125***	0.164***	0.139***	0.151***
	(3.48)	(3.05)	(3.57)	(4.64)	(3.95)	(4.62)
Daycare	0.0174	0.0172	0.0203	-0.00248	0.00143	0.00333
	(0.72)	(0.72)	(0.84)	(-0.11)	(0.07)	(0.15)
Single Mother	0.0561**	0.0643**	0.0739**	0.0638**	0.0524*	0.0412
	(3.07)	(2.61)	(2.17)	(2.87)	(2.39)	(1.88)
Mother Age at Birth	0.233***	0.214***	0.207***	0.0610*	0.0520	0.0142
	(7.81)	(7.23)	(7.07)	(2.05)	(1.11)	(0.51)
Mother Age at Birth Squared	-0.00632***	-0.00575***	-0.00562***	-0.00101	-0.000193	0.000142
	(-7.09)	(-6.50)	(-6.36)	(-1.27)	(-0.24)	(0.26)
Mother's Education	0.0532***	0.0504***	0.0570***	0.0520***	0.0499***	0.0555***
	(10.55)	(9.97)	(11.47)	(11.13)	(10.79)	(12.33)
Female	0.164***	0.159***	0.156***	0.0782***	0.0700***	0.0696***
	(7.08)	(6.81)	(6.65)	(3.60)	(3.29)	(3.26)
Black	-0.203***	-0.241***	-0.251***	-0.240***	-0.278***	-0.295***
	(-6.75)	(-8.15)	(-8.39)	(-8.04)	(-10.59)	(-11.21)
Hispanic	-0.0772*	-0.0880**	-0.0971**	-0.119***	-0.122***	-0.131***
	(-2.43)	(-2.74)	(-3.07)	(-3.96)	(-4.05)	(-4.30)
N	4651	4403	4233	4651	4403	4233
	HOME	HOME Cognitive	HOME Emotional	HOME	HOME Cognitive	HOME Emotional

For Tables 4A and 4B:

t-statistics in parentheses (p<0.001, *** p<0.05, ** p<0.01,*)

Column headers are labeled with the dependent variable used in each regression while row headers are labeled as an independent variable used in the regression. Age controls and their squares are included in estimation but not reported. Income is logged in estimation while HOME scores, cognitive and non-cognitive variables are standardized. Reported coefficients are measured as intergenerational elasticities of income, cognitive skills, and non-cognitive skills. Constants are included but not reported. Standard errors are robust.

Table 4B (continued)

	(1) PIAT Math	(2) PIAT Math	(3) PIAT Math	(4) PPVT	(5) PPVT	(6) PPVT
HOME Scores	0.207***	0.205***	0.116***	0.211***	0.190***	0.106***
	(6.14)	(6.28)	(3.73)	(6.05)	(6.80)	(3.36)
Birthweight	0.0109***	0.0107***	0.00116***	0.0107***	0.0109***	0.00813***
	(2.41)	(2.79)	(4.12)	(1.80)	(2.31)	(2.12)
Pre-Mature	-0.0421**	-0.0535***	-0.0667***	-0.0201	-0.0289	-0.0413
	(-2.35)	(-3.12)	(-3.80)	(-1.07)	(-1.54)	(-1.65)
Birth Order	-0.0342***	-0.0368***	-0.0346***	-0.0496***	-0.0505***	-0.0687***
	(-3.10)	(-4.39)	(-4.22)	(-4.27)	(-4.70)	(-5.95)
Only Child	-0.0123	-0.0174	-0.00941	0.0491**	0.0454**	0.0509**
	(-0.52)	(-0.76)	(-0.41)	(2.08)	(1.97)	(2.20)
Preschool	0.187***	0.162***	0.152***	0.212***	0.206***	0.229***
	(5.30)	(4.68)	(5.30)	(6.26)	(5.36)	(5.97)
Daycare	0.0213	0.0283	0.0212	-0.0169	-0.0135	-0.0241
	(0.98)	(1.34)	(1.04)	(-0.74)	(-0.61)	(-1.08)
Single Mother	0.0193*	0.0413	0.0210	0.0332	0.0287	0.0178
	(2.27)	(1.94)	(1.13)	(1.44)	(1.27)	(0.79)
Mother Age at Birth	0.0757**	0.0532	0.0329	0.0330	0.0120	-0.00102
	(2.68)	(1.89)	(1.23)	(1.08)	(0.40)	(-0.03)
Mother Age at Birth Squared	-0.000918	-0.000481	-0.000101	-0.000392	-0.000204	0.0000796
	(-1.52)	(-0.88)	(-0.20)	(-0.98)	(-0.34)	(0.14)
Mother's Education	0.0451***	0.0415***	0.0478***	0.0378***	0.0345***	0.0419***
	(9.79)	(9.19)	(10.89)	(7.91)	(7.77)	(8.56)
Female	-0.00268	-0.0121	-0.0213	0.0309	0.0167	0.0247
	(-0.13)	(-0.59)	(-1.04)	(1.39)	(0.77)	(1.13)
Black	-0.257***	-0.282***	-0.292***	-0.304***	-0.315***	-0.334***
	(-9.48)	(-10.87)	(-11.93)	(-10.88)	(-11.89)	(-12.30)
Hispanic	-0.172***	-0.180***	-0.185***	-0.230***	-0.235***	-0.268***
	(-5.02)	(-5.30)	(-6.69)	(-7.51)	(-7.74)	(-8.48)
N	4651	4403	4733	4651	4403	4733

For Tables 4A and 4B:

t-statistics in parentheses (p<0.001, *** p<0.05, ** p<0.01,*)

Column headers are labeled with the dependent variable used in each regression while row headers are labeled as an independent variable used in the regression. Age controls and their squares are included in estimation but not reported. Income is logged in estimation while HOME scores, cognitive and non-cognitive variables are standardized. Reported coefficients are measured as intergenerational elasticities of income, cognitive skills, and non-cognitive skills. Constants are included but not reported. Standard errors are robust.

Table 4C: Impact of Maternal Inputs of Non-Cognitive Scores
Children Ages 3-5

	(1) Rosenberg	(2) Rosenberg	(3) Rosenberg	(4) Pearlin	(5) Pearlin	(6) Pearlin
HOME Scores	0.102*	0.0343	0.103*	0.116*	0.0446	0.120**
	(2.24)	(0.75)	(2.33)	(2.54)	(0.97)	(2.72)
Birthweight	0.000789	0.00103	0.000305	0.000823	0.00111	0.000416
	(1.19)	(1.53)	(0.44)	(1.24)	(1.65)	(0.60)
Pre-Mature	0.0911**	0.0813*	0.0830**	0.106***	0.0945**	0.0952**
	(2.94)	(2.57)	(2.59)	(3.42)	(2.99)	(2.97)
Birth Order	0.0268	0.0142	0.0210	0.0307	0.0190	0.0275
	(1.38)	(0.73)	(1.06)	(1.58)	(0.97)	(1.39)
Only Child	0.137***	0.132***	0.124***	0.163***	0.160***	0.149***
	(3.86)	(3.66)	(3.36)	(4.56)	(4.39)	(4.00)
Preschool	0.245***	0.243***	0.226***	0.243***	0.240***	0.219***
	(4.81)	(4.75)	(4.29)	(4.76)	(4.68)	(4.15)
Daycare	-0.0465	-0.0616	-0.0346	-0.0485	-0.0662	-0.0360
	(-1.20)	(-1.56)	(-0.85)	(-1.23)	(-1.66)	(-0.87)
Single Mother	-0.00277	-0.0103	0.0388	0.00598	-0.000904	0.0479
	(-0.07)	(-0.26)	(0.98)	(0.16)	(-0.02)	(1.20)
Mother Age at Birth	0.611***	0.627***	0.620***	0.617***	0.634***	0.624***
	(11.88)	(11.96)	(11.47)	(12.07)	(12.18)	(11.62)
Mother Age at Birth Squared	-0.0142***	-0.0144***	-0.0143***	-0.0143***	-0.0146***	-0.0144***
	(-14.05)	(-14.09)	(-13.49)	(-14.21)	(-14.28)	(-13.62)
Mother's Education	0.000152	0.00136	-0.00378	0.000559	0.00194	-0.00325
	(0.02)	(0.17)	(-0.46)	(0.07)	(0.24)	(-0.39)
Female	-0.0459	-0.0484	-0.0551	-0.0380	-0.0378	-0.0474
	(-1.25)	(-1.30)	(-1.44)	(-1.03)	(-1.01)	(-1.23)
Black	0.107*	0.0917	0.0986*	0.0435	0.0339	0.0405
	(2.22)	(1.96)	(1.98)	(0.91)	(0.73)	(0.82)
Hispanic	0.0771	0.0625	0.0766	0.0766	0.0614	0.0738
	(1.61)	(1.27)	(1.57)	(1.59)	(1.24)	(1.50)
N	2914	2821	2637	2914	2821	2637
	HOME	HOME Cognitive	HOME Emotional	HOME	HOME Cognitive	HOME Emotional

t-statistics in parentheses (p<0.001, *** p<0.05, ** p<0.01,*)

Column headers are labeled with the dependent variable used in each regression while row headers are labeled as an independent variable used in the regression. HOME scores are standardized in estimation. Age controls and their squares are included in estimation but not reported. Income is logged in estimation while cognitive and non-cognitive variables are standardized. Reported coefficients are measured as intergenerational elasticities of income, cognitive skills, and non-cognitive skills. Constants are included but not reported. Standard errors are robust.

Table 4C (Continued)
Children Ages 6-9

	(1) Rosenberg	(2) Rosenberg	(3) Rosenberg	(4) Pearlin	(5) Pearlin	(6) Pearlin
HOME Scores	0.188***	0.162***	0.127***	0.230***	0.187***	0.159***
	(5.38)	(4.59)	(3.54)	(6.57)	(5.34)	(4.43)
Birthweight	0.00101*	0.00124**	0.00126**	0.00107*	0.00136**	0.00128**
	(2.20)	(2.64)	(2.63)	(2.34)	(2.92)	(2.69)
Pre-Mature	0.0677**	0.0602*	0.0669**	0.0830***	0.0744**	0.0854***
	(2.96)	(2.52)	(2.75)	(3.64)	(3.14)	(3.54)
Birth Order	0.0114	0.00782	0.00859	0.0240	0.0188	0.0193
	(0.79)	(0.53)	(0.57)	(1.65)	(1.27)	(1.27)
Only Child	0.0680**	0.0742**	0.0620*	0.0962***	0.0998***	0.0888***
	(2.90)	(3.14)	(2.53)	(4.10)	(4.21)	(3.61)
Preschool	0.222***	0.230***	0.234***	0.211***	0.214***	0.219***
	(5.13)	(5.13)	(5.14)	(4.86)	(4.78)	(4.79)
Daycare	-0.0540*	-0.0502	-0.0489	-0.0539*	-0.0542*	-0.0508
	(-2.04)	(-1.88)	(-1.78)	(-2.02)	(-2.02)	(-1.84)
Single Mother	0.00820	-0.00320	0.00442	0.00178	-0.0145	-0.00304
	(0.32)	(-0.12)	(0.17)	(0.07)	(-0.56)	(-0.11)
Mother Age at Birth	0.479***	0.487***	0.487***	0.486***	0.490***	0.492***
	(16.10)	(16.01)	(15.37)	(16.23)	(16.00)	(15.45)
Mother Age at Birth Squared	-0.0118***	-0.0119***	-0.0119***	-0.0120***	-0.0120***	-0.0121***
	(-18.77)	(-18.53)	(-17.84)	(-18.91)	(-18.54)	(-17.95)
Mother's Education	0.00467	0.00304	0.00538	0.00470	0.00409	0.00651
	(0.86)	(0.54)	(0.98)	(0.85)	(0.73)	(1.18)
Female	-0.0293	-0.0264	-0.0240	-0.0263	-0.0246	-0.0232
	(-1.18)	(-1.05)	(-0.93)	(-1.06)	(-0.98)	(-0.90)
Black	0.171***	0.157***	0.160***	0.0917**	0.0711*	0.0777*
	(5.48)	(5.02)	(4.97)	(2.98)	(2.30)	(2.43)
Hispanic	0.0791*	0.0795*	0.0785*	0.0744*	0.0746*	0.0717*
	(2.42)	(2.40)	(2.35)	(2.27)	(2.24)	(2.14)
N	4651	4403	4233	4651	4403	4233
	HOME	HOME Cognitive	HOME Emotional	HOME	HOME Cognitive	HOME Emotional

t-statistics in parentheses (p<0.001, *** p<0.05, ** p<0.01,*)

Column headers are labeled with the dependent variable used in each regression while row headers are labeled as an independent variable used in the regression. HOME scores are standardized in estimation. Age controls and their squares are included in estimation but not reported. Income is logged in estimation while cognitive and non-cognitive variables are standardized. Reported coefficients are measured as intergenerational elasticities of income, cognitive skills, and non-cognitive skills. Constants are included but not reported. Standard errors are robust.

Table 5A: Considering Parenting Style (Falk et. al., 2017) on the Impact of Maternal Investments on Cognitive Scores (Children 6-9)

	(1) PIAT RR	(2) PIAT RR	(3) PIAT RR	(4) PIAT RC	(5) PIAT RC	(6) PIAT RC	(7) PIAT Math	(8) PIAT Math	(9) PIAT Math	(10) PPVT	(11) PPVT	(12) PPVT
HOME Scores	0.284***	0.243***	0.138***	0.256***	0.218***	0.116***	0.195***	0.176***	0.0853**	0.206***	0.209***	0.0853**
	(8.33)	(7.15)	(4.38)	(8.81)	(7.56)	(4.45)	(6.69)	(6.18)	(3.26)	(6.41)	(6.66)	(2.85)
Spank	0.00481	0.00414	0.00290	0.00171	0.000696	-0.000753	0.00327	0.00245	0.00167	0.00261	0.00112	-0.000175
	(1.81)	(1.54)	(1.11)	(0.89)	(0.37)	(-0.43)	(1.76)	(1.35)	(0.93)	(1.33)	(0.61)	(-0.10)
Ground	-0.00910**	-0.00981**	-0.0114***	-0.00551**	-0.00600**	-0.00693***	-0.00372	-0.00376	-0.00494*	-0.00158	-0.00174	-0.00283
	(-3.08)	(-3.20)	(-3.40)	(-2.62)	(-2.87)	(-3.32)	(-1.66)	(-1.67)	(-2.06)	(-0.78)	(-0.87)	(-1.36)
Punish	-0.00215	-0.00516	-0.00785	0.000269	-0.00513	-0.00485	0.00742	0.00333	0.00312	0.00264	0.00175	-0.000942
	(-0.23)	(-0.55)	(-0.83)	(0.03)	(-0.61)	(-0.59)	(0.92)	(0.41)	(0.40)	(0.30)	(0.20)	(-0.11)
Praise	-0.000242	-0.000230	-0.000184	0.0000243	0.0000369	0.000128	0.000148	0.000151	0.000210	0.00000141	-0.0000135	0.0000866
	(-1.62)	(-1.57)	(-1.12)	(0.19)	(0.30)	(0.94)	(1.27)	(1.33)	(1.72)	(0.01)	(-0.09)	(0.52)
Know Where Child Is	0.100***	0.0890**	0.0955***	0.0261	0.0186	0.0275	0.0712**	0.0625**	0.0658**	-0.00729	-0.00817	-0.00192
	(3.63)	(3.18)	(3.36)	(1.14)	(0.80)	(1.17)	(3.15)	(2.76)	(2.88)	(-0.30)	(-0.34)	(-0.08)
Rules Know Where Child Is	1.038***	0.982***	0.911***	1.292***	1.234***	1.159***	1.304***	1.228***	1.146***	1.180***	1.115***	1.044***
	(17.38)	(15.70)	(14.26)	(22.05)	(20.19)	(18.68)	(21.39)	(19.23)	(17.75)	(19.33)	(17.51)	(16.29)
N	*4618*	*4380*	*4209*	*4618*	*4380*	*4209*	*4618*	*4380*	*4209*	*4618*	*4380*	*4209*

t-statistics in parentheses (p<0.001, *** p<0.05, ** p<0.01,*)

Column headers are labeled with the dependent variable used in each regression while row headers are labeled as an independent variable used in the regression. All controls used in Table 4A-4D are included in estimation but not reported. HOME scores, cognitive and non-cognitive variables are standardized. Reported coefficients are measured as intergenerational elasticities of income, cognitive skills, and non-cognitive skills. Constants are included but not reported. Standard errors are robust.

Table 5B: Considering Parenting Style (Falk et. al., 2017) on the Impact of Maternal Investments on Non-Cognitive Scores (Children 6-9)

	(1) Rosenberg	(2) Rosenberg	(3) Rosenberg	(4) Pearlin	(5) Pearlin	(6) Pearlin
HOME Scores	0.187***	0.158***	0.114**	0.227***	0.182***	0.147***
	(5.23)	(4.40)	(3.20)	(6.35)	(5.11)	(4.08)
Spank	-0.000739	-0.000563	-0.00113	0.000223	0.000196	-0.000472
	(-0.32)	(-0.25)	(-0.49)	(0.10)	(0.08)	(-0.20)
Ground	0.000932	0.000115	-0.00118	0.000892	-0.000205	-0.00123
	(0.28)	(0.03)	(-0.35)	(0.28)	(-0.06)	(-0.40)
Punish	-0.0344**	-0.0363**	-0.0354**	-0.0351**	-0.0377**	-0.0365**
	(-3.05)	(-3.15)	(-3.00)	(-3.12)	(-3.28)	(-3.09)
Praise	-0.000520	-0.000487	-0.000423	-0.000564	-0.000529	-0.000438
	(-1.73)	(-1.62)	(-1.24)	(-1.86)	(-1.75)	(-1.27)
Know Where Child Is	0.149***	0.135***	0.124***	0.141***	0.126***	0.111***
	(4.81)	(4.29)	(3.87)	(4.56)	(4.03)	(3.48)
Rules Know Where Child Is	0.241***	0.219***	0.226***	0.263***	0.238***	0.247***
	(4.51)	(3.99)	(3.91)	(4.88)	(4.28)	(4.20)
N	*4618*	*4380*	*4209*	*4618*	*4380*	*4209*
	HOME	HOME Cognitive	HOME Emotional	HOME	HOME Cognitive	HOME Emotional

t-statistics in parentheses (p<0.001, *** p<0.05, ** p<0.01,*)

Column headers are labeled with the dependent variable used in each regression while row headers are labeled as an independent variable used in the regression. All HOME scores are standardized in estimation. All controls used in Table 4A-4D are included in estimation but not reported. Cognitive and non-cognitive variables are standardized. Constants are included but not reported. Standard errors are robust.

Table 5C: Considering Parenting Style (Del Bono et. al., 2016) on the Impact of Maternal Investments on Cognitive and Non-Cognitive Scores

Children 3-5

Children 3-5

	(1) PIAT RR	(2) PIAT RC	(3) PIAT Math	(4) PPVT	(5) Rosenberg	(6) Pearlin
HOME Scores	0.192***	0.162***	0.121***	0.0937**	0.0626*	0.0762**
	(6.14)	(5.97)	(4.41)	(3.02)	(2.19)	(2.70)
Fruit	-0.0473***	-0.0354***	-0.0218*	-0.0156	0.0188	0.00981
	(-4.37)	(-3.74)	(-2.30)	(-1.58)	(1.82)	(0.95)
Vegetables	0.0373**	0.0442***	0.0269*	0.0283**	0.0182	0.0116
	(3.18)	(4.29)	(2.55)	(2.60)	(1.74)	(1.09)
Bedtime	0.00804	0.0978*	0.137**	0.181***	-2.632***	-2.661***
	(0.20)	(2.44)	(3.29)	(3.77)	(-82.74)	(-85.21)
No Limit on TV	-0.0184	-0.0182	0.00882	0.0271	0.119***	0.124***
	(-0.70)	(-0.78)	(0.39)	(1.09)	(5.00)	(5.24)
Computer Games	0.101***	0.122***	0.130***	0.104***	0.0484***	0.0472***
	(16.18)	(21.73)	(22.18)	(18.54)	(7.79)	(7.55)
N	2914	2914	2914	2914	2914	2914

Children 6-9

	(1) PIAT RR	(2) PIAT RC	(3) PIAT Math	(4) PPVT	(5) Rosenberg	(6) Pearlin
HOME Scores	0.282***	0.266***	0.203***	0.211***	0.132***	0.174***
	(8.24)	(8.71)	(6.67)	(6.33)	(5.29)	(6.98)
Fruit	-0.0379***	-0.0287***	-0.0163*	-0.0164*	0.00283	-0.00217
	(-4.28)	(-3.66)	(-2.14)	(-2.01)	(0.40)	(-0.31)
Vegetables	0.0309**	0.0317***	0.0155	0.0193*	0.0233**	0.0202**
	(3.24)	(3.78)	(1.88)	(2.16)	(3.17)	(2.70)
Bedtime	-0.0364	0.0922*	0.127**	0.183***	-2.611***	-2.632***
	(-0.95)	(2.42)	(3.25)	(4.02)	(-83.12)	(-84.91)
No Limit on TV	-0.000141	-0.0321	-0.00220	0.0217	0.0642***	0.0710***
	(-0.01)	(-1.69)	(-0.12)	(1.08)	(3.48)	(3.91)
Computer Games	0.0709***	0.0800***	0.0849***	0.0630***	0.0194***	0.0179***
	(17.04)	(19.41)	(20.72)	(14.91)	(5.57)	(5.15)
N	4651	4651	4651	4651	4651	4651

t-statistics in parentheses (p<0.001, *** p<0.05, ** p<0.01,*)

Column headers are labeled with the dependent variable used in each regression while row headers are labeled as an independent variable used in the regression. All HOME scores are based on the composite score and standardized in estimation. All controls used in Table 4A-4D are included in estimation. Cognitive and non-cognitive variables are standardized. Constants are included but not reported. Standard errors are robust.

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Table 6: Intergenerational Persistence of Skills and Maternal Inputs Impact of Test Scores

Children 3-5

	(1) PIAT RR	(2) PIAT RC	(3) PIAT Math	(4) PPVT	(5) Rosenberg	(6) Pearlin
HOME	0.162***	0.122***	0.0916***	0.0648*	0.0462	0.0608*
	(5.21)	(4.63)	(3.38)	(2.10)	(1.60)	(2.11)
IGE	0.147***	0.171***	0.177***	0.142***	0.0654***	0.0467**
	(8.14)	(10.52)	(11.29)	(8.41)	(4.60)	(2.92)
N	2825	2825	2825	2825	2914	2914

Children 6-9

	(1) PIAT RR	(2) PIAT RC	(3) PIAT Math	(4) PPVT	(5) Rosenberg	(6) Pearlin
HOME	0.225***	0.199***	0.137***	0.158***	0.112***	0.162***
	(6.51)	(6.51)	(4.46)	(4.65)	(4.41)	(6.30)
IGE	0.178***	0.180***	0.175***	0.134***	0.0482***	0.0353**
	(11.64)	(12.92)	(13.23)	(9.44)	(4.69)	(3.05)
N	4499	4499	4499	4499	4651	4651

t-statistics in parentheses (p<0.001, *** p<0.05, ** p<0.01,*)

Column headers are labeled with the dependent variable used in each regression while row headers are labeled as an independent variable used in the regression. All HOME scores are based on the composite score and standardized in estimation. All controls used in Table 4A-4D are included in estimation as well as parenting style but not reported. Cognitive and non-cognitive variables are standardized. Reported coefficients are measured as intergenerational elasticities of income, cognitive skills, and non-cognitive skills. Constants are included but not reported. Standard errors are robust.

Table 7A: Cumulative Value Added Model

Children 0-2

	(1) PIAT RR	(2) PIAT RC	(3) PIAT Math	(4) PPVT	(5) Rosenberg	(6) Pearlin
HOME Score	0.115**	0.0671	0.0320	0.0223	0.161*	0.175
	(3.10)	(1.74)	(0.73)	(0.42)	(2.15)	(1.91)
Lagged Skill	0.503***	0.452***	0.459***	0.356***	0.481***	0.298***
	(11.99)	(11.74)	(11.29)	(6.15)	(8.32)	(4.23)
N	581	578	584	201	207	207

Children 3-5

	(1) PIAT RR	(2) PIAT RC	(3) PIAT Math	(4) PPVT	(5) Rosenberg	(6) Pearlin
HOME Score	0.110***	0.122***	0.0856*	0.114*	0.143	0.211**
	(3.78)	(3.71)	(2.56)	(2.33)	(1.68)	(2.63)
Lagged Skill	0.477***	0.507***	0.492***	0.351***	0.487***	0.373***
	(25.26)	(26.98)	(25.60)	(11.58)	(15.02)	(10.56)
N	2691	2669	2697	868	748	747

Children 6-9

	(1) PIAT RR	(2) PIAT RC	(3) PIAT Math	(4) PPVT	(5) Rosenberg	(6) Pearlin
HOME Score	0.211***	0.217***	0.176***	0.134*	0.210***	0.205***
	(6.15)	(6.89)	(5.50)	(2.56)	(3.42)	(4.39)
Lagged Skill	0.548***	0.521***	0.505***	0.401***	0.415***	0.325***
	(42.27)	(36.76)	(32.03)	(13.89)	(17.55)	(12.90)
N	4410	4369	4413	1251	1652	1652

Children 10 and older

	(1) PIAT RR	(2) PIAT RC	(3) PIAT Math	(4) PPVT
HOME Score	0.102**	0.0884*	0.176***	-1.584
	(2.88)	(2.10)	(4.19)	(-2.96)
Lagged Skill	0.585***	0.584***	0.570***	-0.118
	(11.63)	(10.66)	(10.49)	(-0.27)
N	392	392	392	23

Table 8A: Intergenerational Mobility and Maternal Time Investments Impact of Skills using a Cumulative Value Added Model

Children 3-5

	(1) PIAT RR	(2) PIAT RC	(3) PIAT Math	(4) PPVT	(5) Rosenberg	(6) Pearlin
HOME Score	0.0957***	0.0862**	0.0434	0.0958*	0.144	0.173*
	(3.35)	(2.70)	(1.35)	(1.99)	(1.66)	(2.12)
IGE	0.0883***	0.130***	0.195***	0.130***	-0.00149	0.108**
	(5.66)	(6.65)	(10.28)	(4.96)	(-0.04)	(2.67)
Lagged Input	0.476***	0.493***	0.470***	0.346***	0.487***	0.369***
	(28.72)	(25.81)	(24.12)	(11.39)	(14.97)	(10.56)
N	2615	2594	2621	848	748	747

Children 6-9

	(1) PIAT RR	(2) PIAT RC	(3) PIAT Math	(4) PPVT	(5) Rosenberg	(6) Pearlin
HOME Score	0.182***	0.181***	0.124***	0.0970	0.203**	0.273***
	(5.16)	(5.74)	(3.86)	(1.87)	(3.19)	(4.05)
IGE	0.0789***	0.133***	0.167***	0.130***	0.0173	0.0676**
	(5.36)	(8.68)	(11.54)	(6.28)	(0.72)	(2.58)
Lagged Input	0.544***	0.503***	0.485***	0.391***	0.414***	0.323***
	(40.88)	(34.59)	(30.95)	(13.46)	(17.37)	(12.74)
N	4279	4241	4289	1217	1652	1652

For Tables 7A & 7B:

t-statistics in parentheses (p<0.001, *** p<0.05, ** p<0.01,*)

Column headers are labeled with the dependent variable used in each regression while row headers are labeled as an independent variable used in the regression. All HOME scores are based on the composite score and standardized in estimation. All controls used in Table 4A-4D are included in estimation as well as parenting style but not reported. Cognitive and non-cognitive variables are standardized. Reported coefficients are measured as intergenerational elasticities of income, cognitive skills, and non-cognitive skills. Constants are included but not reported. Standard errors are robust.

Table 8B: Interaction of Intergenerational Mobility and Maternal Inputs

Children 3-5

	(1) PIAT RR	(2) PIAT RC	(3) PIAT Math	(4) PPVT	(5) Rosenberg	(6) Pearlin
HOME Score	0.0935***	0.0841**	0.0470	0.0897	0.0606	0.0380
	(3.32)	(2.62)	(1.47)	(1.82)	(1.02)	(0.74)
IGE	0.141*	0.182*	0.108	0.217	2.264***	2.397***
	(2.29)	(2.46)	(1.55)	(1.84)	(20.82)	(43.15)
HOME Score x IGE	-0.0219	-0.0214	0.0359	-0.0365	0.00737	0.0173
	(-0.87)	(-0.71)	(1.26)	(-0.78)	(0.75)	(1.51)
Lagged Input	0.476***	0.494***	0.469***	0.346***	-0.357***	-0.394***
	(28.71)	(25.78)	(24.11)	(11.44)	(-6.08)	(-12.40)
N	2615	2594	2621	848	748	747

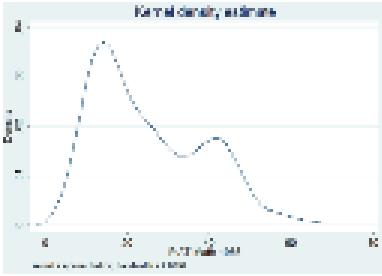
Children 6-9

	(1) PIAT RR	(2) PIAT RC	(3) PIAT Math	(4) PPVT	(5) Rosenberg	(6) Pearlin
HOME Score	0.169***	0.177***	0.130***	0.0877	0.0668	0.0798
	(4.84)	(5.45)	(4.07)	(1.67)	(1.36)	(1.55)
IGE	0.199***	0.172**	0.113*	0.223*	1.909***	2.006***
	(3.57)	(3.11)	(2.09)	(2.37)	(27.63)	(36.81)
HOME Score x IGE	-0.0662*	-0.0214	0.0299	-0.0513	0.00925	0.0240*
	(-2.22)	(-0.72)	(1.03)	(-1.02)	(0.89)	(2.18)
Lagged Input	0.544***	0.503***	0.485***	0.391***	-0.209***	-0.265***
	(40.78)	(34.60)	(30.94)	(13.48)	(-6.13)	(-10.02)
N	4279	4241	4289	1217	1652	1652

t-statistics in parentheses (p<0.001, *** p<0.05, ** p<0.01,*)

Column headers are labeled with the dependent variable used in each regression while row headers are labeled as an independent variable used in the regression. All HOME scores are based on the composite score. All controls used in Table 4A-4D are included in estimation as well as parenting style but not reported. HOME scores, Cognitive and non-cognitive variables are standardized. Reported IGE coefficients are measured as inter-generational elasticities of income, cognitive skills, and non-cognitive skills. Constants are included but not reported. Standard errors are robust.

Figure 1a: PIAT Math Scores by Survey Year



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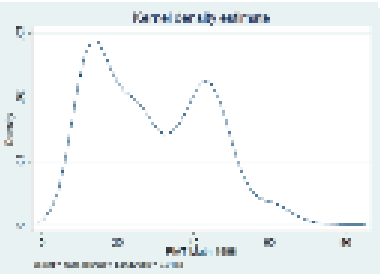

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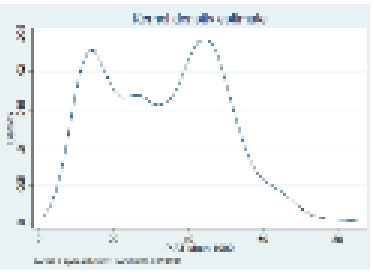

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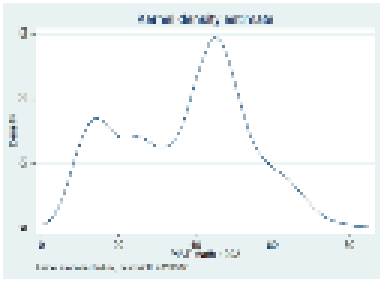

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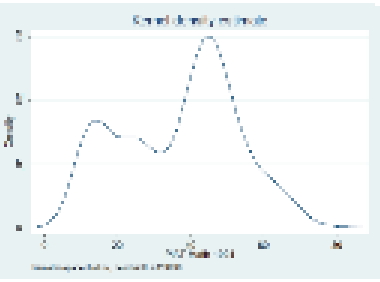

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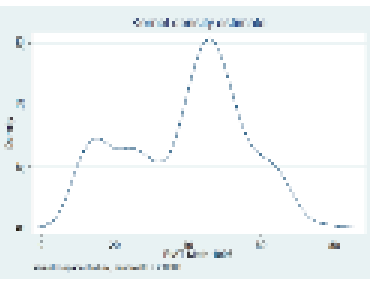

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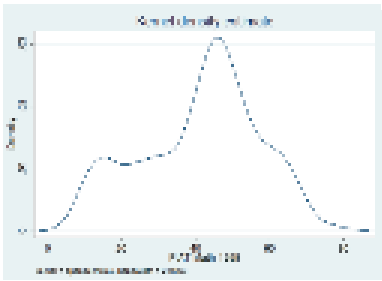

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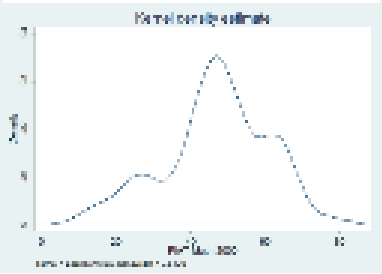

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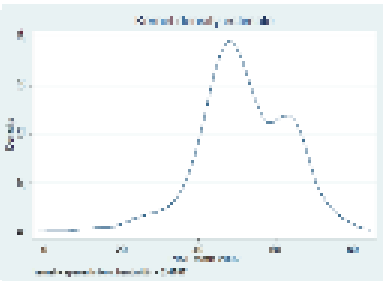

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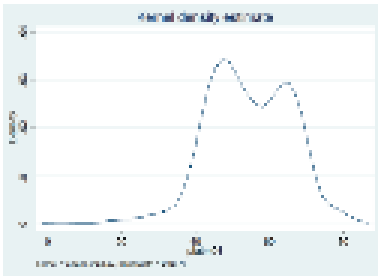

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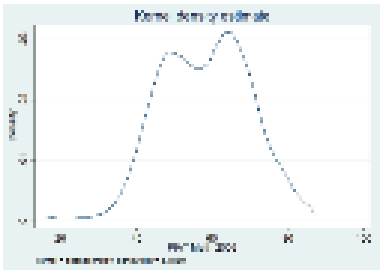
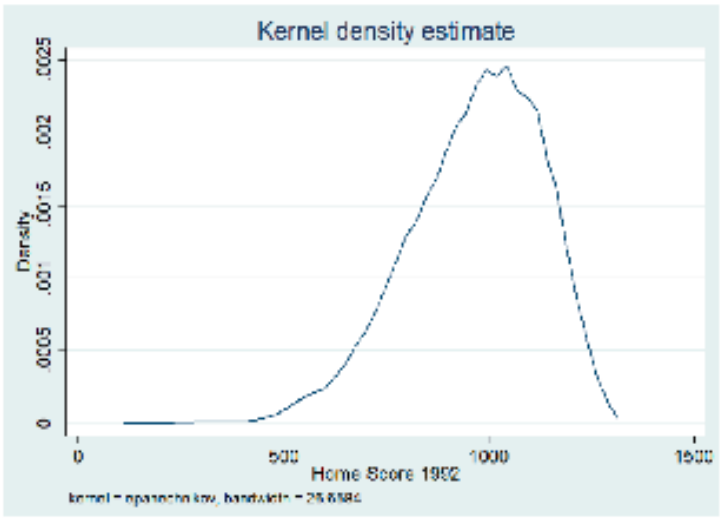
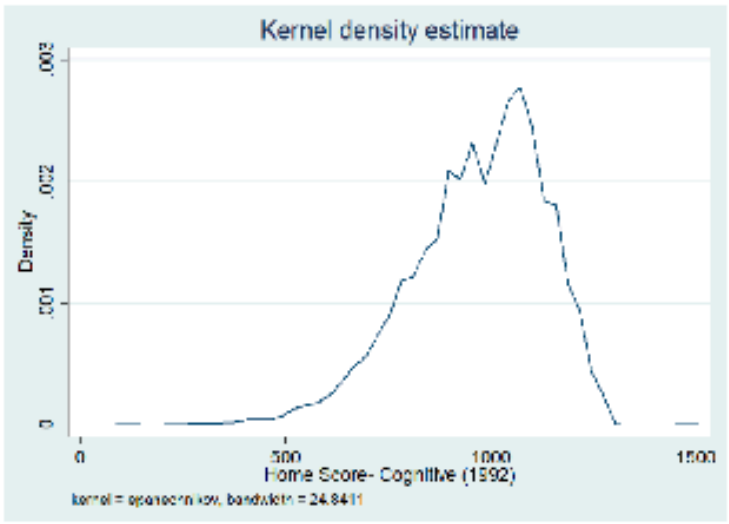


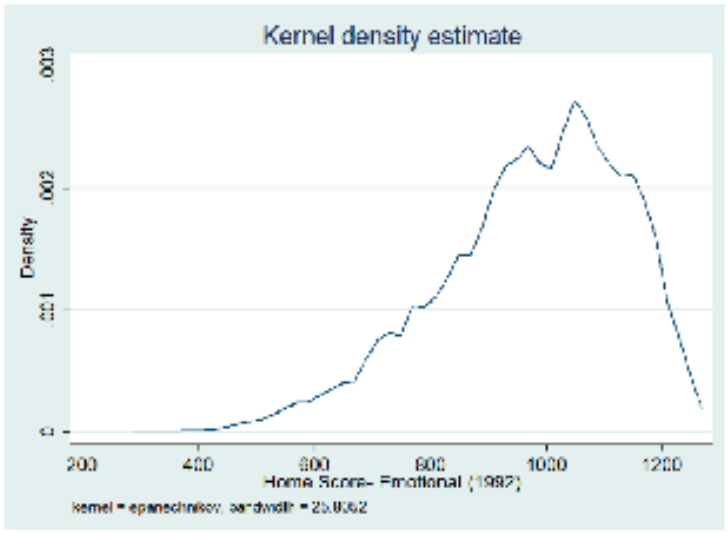
N=397

PIAT Math 2008 N= 1

Figure: Kernel Density Estimates of HOME Scores





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