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The Changing Returns to Education: An Analysis of the Returns to Education as they Change from 2002 to 2012 in 5 Countries

Jonas Wightman 16
Illinois Wesleyan University, jwightma@iwu.edu

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Abstract

Education is widely understood to impact earnings, but the dynamics of this relationship - specifically, the returns to education - are important to consider in depth. Through a synthesis of human capital theory and the Paradox of Progress, which relates income ine-quality to educational attainment, I explore how the returns to education have changed over time. I use 2002 and 2012 International Social Survey Programme (ISSP) income and education data to first determine the returns to education within the United States, Germany, Poland, Slovenia, and Sweden with OLS regressions and then to comparatively analyze how the measure changed from one year to the next in each country. I find that there is not a consistent pattern of change across the entire panel of countries, which suggests that the Paradox of Progress might not be universally pertinent.

Keywords

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Education is widely understood to impact earnings, but the dynamics of this relationship – specifically, the returns to education – are important to consider in depth. Through a synthesis of human capital theory and the Paradox of Progress, which relates income ine-quality to educational attainment, I explore how the returns to education have changed over time. I use 2002 and 2012 International Social Survey Programme (ISSP) income and education data to first determine the returns to education within the United States, Germany, Poland, Slovenia, and Sweden with OLS regressions and then to comparatively analyze how the measure changed from one year to the next in each country. I find that there is not a consistent pattern of change across the entire panel of countries, which sug-gests that the Paradox of Progress might not be universally pertinent.

I. Introduction

Education is widely understood to impact earnings. But the dynamics of this relationship – specifically, the degree to which education leads to high-er income later in life – are important to consider in depth. An understanding of this phenomenon informs individuals' decisions regarding the pursuit of educational attainment; is one more year of schooling worth the time it detracts from other pursuits – say, entering the labor force? It is an important decision and, while there are many other elements to consider when making it, an understanding of the returns to education can prove instrumental.

But these returns change over time; the relative value of education today is not the same as it was ten years ago. And so a measure of education's contemporaneous impacts does not provide insight into how the benefits of schooling change as time progresses. This essay considers these dynamics by examining the returns to education within a panel of countries at two points in time – in 2002 and in 2012 – and comparing them. Through this analysis, we can track changes in the value of education over time and, by the nature of this particular approach, across countries.

In Section II, I provide an overview of human capital theory and a commentary on the findings of François Bourguignon, Francisco H. C. Ferreira, and Nora Lustig (2005) as they pertain to the value of education. I then consolidate the foundations and conclusions of this theory and these findings to present the hypothesis that the value of education will rise over time. Section III discusses the datasets with which I assess the returns to education, the processes through which I made these data effective, and the models I use to determine the returns to education. Section IV analyzes the results from the models provided in Section III and Section V speaks to their findings and the impli-cations we can pull from them.

II. Theory & Literature
A. Human Capital Theory

While the concepts it seeks to address have been present in economic schools of thought for quite some time, human capital theory has only existed in the capacity it does now for about three decades (Rosen, 2008). It is an outgrowth of capital theory, which seeks to explain the allocation and both the short-term and long-term effects that investment in resources yield (Bliss, 2005). In human capital theory, this invest-ment in re-sources takes shape through education and training (Becker, 1964). The theory expresses that, over their life cycle, individuals can develop their skills and earning capacity. As such, it effectively explains how self-investment can lead to higher levels of short-term

earnings and long-term wealth.
Becker addresses on-the-job training and various other methods of gaining knowledge, but most of the theory – and this essay – focuses on education. In this context, human capital theory suggests positive returns to education. This is not disputed. It is very widely accepted that increases to education lead to higher levels of income , though there is some debate over the dynamics of this relationship. Signalling theory, for instance, suggests that individuals do not obtain education to develop their human capital but rather to signal a variety of desirable traits–discipline, drive, intelligence, and the ability to learn, to name a few–to potential employers.

Both of these theories correlate higher levels of education with higher levels of wealth, but human capital theory presents education as the cause of this positive correla-tion. This essay will explore the relationship that education has with income. By placing this conversation within human capital theory, we can discuss changes in the education-income correlation in terms of returns to education.

B. Education & Income Inequality

François Bourguignon, Francisco H. C. Ferreira, and Nora Lustig (2005) edited a book titled The Microeconomics of Income Distribution Dynamics in East Asia and Latin America in which they attempt to explore the changes in the distribution of income during periods of economic development; their intention with this book is not to propose a universal theory on income distribution or development but rather to show that there is an incredible amount of diversity in the developmental processes of different countries. They approach this topic with a somewhat narrowed lens, focusing on seven countries within East Asia and Latin America: Argentina, Brazil, Colombia, Indonesia, Malaysia, Mexico, and Taiwan.

The time periods in each of these countries that Bourguignon, Ferreira, and Lustig examined were not consistent in length–their analysis of Brazil included data spanning a 20 year period while the Colombian data ranges only 7 years–but all seven case studies cover periods ending in the mid to late 1990's. The inconsistency in duration is obviously undesirable, but the bulk of their analysis only considers the beginning and end of the sampled period, which produces less inconsistency than if they considered shorter-term changes within the countries with larger sample periods.

They use a generalized form of the Oaxaca-

Blinder decomposition method to consider more intimately the causal effects of various changes within these countries. Bourguignon, Ferreira, and Lustig use the technique to explore income inequality at a national scale; its implementation is similar in nature to the labor-market applications for which it was developed and initially used, but repurposed for a macroeconomic analysis of overall income inequality and the effects of a slightly broader variety of indicators – most importantly for the purposes of this paper: education levels .

One of Bourguignon, Ferriera, and Lustig's primary focuses related to the levels of educational attainment in these countries. Unsurprisingly, average levels of education rose in all seven countries; but the dynamics of this change were unexpected. One might think that developing countries, in particular, would experience larger rises in educational attainment among the younger members of society and thus a widening of the educational attainment gap between younger working-age individuals and older working-age individuals. This would reflect the widely popularized developmental pattern presented by Simon Kuznets (Kuznets, 1955). But, while I expect this pattern might still hold in more undeveloped parts of the world, Bourguignon, Ferreira, and Lustig did away with this concept within their study by noting that:

"In actual fact, the distribution of schooling levels in the population at working age became more equal in all seven countries. The difference across countries in the effect of more education on inequality must, therefore, lie in the mechanism of transmission from education to household incomes, rather than the dynamics of the distribution of years of schooling itself."
(Bourguignon, Ferreira, & Lustig, 2005, p. 394)

And so we see that a country's stage of development does not signal any particularly relevant details about the distribution of education within its borders. Levels of educational attainment equalized across the board.

In Subsection A of this section, we established that earnings were tightly tied to an individual's education. Here, we see that educational levels became more similar across the population. Ceteris paribus, we would expect these two premises, in conjunction, to reduce income inequality – indi-

viduals across the country are obtaining more similar levels education and thus should obtain more similar levels of income. But this is not what we see.

Bourguignon, Ferreira, and Lustig's analysis revealed that income inequality actually rose in nearly all of the countries in question. They present a concept they label 'The Paradox of Progress' to discuss this. Generally, increases in educational attainment and decreases in inequality are both viewed as signs of progress. But the Paradox of Progress suggests that these do not go hand-in-hand; instead, increases in educational attainment actually cause higher levels of income inequality.

Their analysis identifies that the education-inequality relationship is rooted in how education translates into earnings rather than how education is distributed across the population. More than this, they do not comment on the causes for the Paradox of Progress. I suggest that the cause relates to the returns to education.

Gasparini, Marchionni, and Escudero (2005) conclude after a regression analysis of wage-education profiles in Argentina that, "[in] summary, the changes in the returns to education appear to have been mildly inequality reducing between 1986 and 1992 and strongly inequality increasing in the next six years." (p. 56) This is a simple, yet profound finding: the returns to education impacted income inequality to varying degrees at different points in time.

The role of education actually changed enough between these two periods to have a drastically different effect. And if the effect of education on income inequality changes while the distribution of schooling becomes more uniform, the value of education must be changing. This takes Bourguignon, Ferreira, and Lustig's conclusions regarding the relevance of the mechanisms of transmission from education to earnings and suggests that the returns to education might be a primary cause for the Paradox of Progress.

In this essay, I examine the impacts of education as they change over time. If these returns rise consistently, it suggests that increasing returns to education are a primary cause for the Paradox of Progress. And so, I hypothesize that the returns to education increase over time.

III. Empirical Model

To explore this relationship, I use data from the International Social Survey Programme (ISSP), a program co-founded in 1984 through the collaborative efforts of various universities and research institutions to develop data that is internationally comparable and targeted at particular areas of focus. These data are collected independently by various entities associated with ISSP and compiled by the Zentralarchiv für Empirische Sozialforschung, University of Cologne in collaboration with the Analisis Sociologicos, Economicos y Politicos in Spain. The questions and topics are originally written in English and developed in a manner so as to be relevant in all countries involved.

ISSP conducts a variety of surveys focused on different topics; one of its more unique traits is the fact that the same sorts of surveys are conducted periodically. The particular data I use here are from the Family and Changing Gender Roles Surveys of 2002 and 2012. I focus on five countries: the United States, Germany , Poland, Slovenia, and Sweden. The surveys in each of these countries gathered data on over 900 subjects.

The ISSP provides comprehensive survey data – the topic-relevant survey ques-tions are generated and translated collaboratively across the involved countries, so this information is consistent and relatively straightforward. But much of the other relevant data – particularly measures of income – are not normalized across the different countries. This information is gathered in local currency units and is often measured on varying scales; for instance, data collectors in the United States ask respondents for annual income while those in European countries are usually interested in monthly earnings. Further, while most surveys ask for post-tax income, some are concerned with respondent earnings prior to tax payments. This is particularly problematic in Europe, where many countries implement social-democratic welfare regimes.

I normalized these data into annual terms and into 2010 USD using the Official Exchange Rate and Consumer Price Index measures from The World Bank's World Development Indicators to convert local currencies to USD and then to adjust for inflation. The ISSP codebooks provided information on the various questions asked in each country; I used these to identify those countries which gathered monthly data and multiplied their earnings data by a factor of twelve to convert them into annual measures. Sweden, in

2012, asked respondents for before-tax income; they implement a flat tax at 56% across the population, so I simply adjusted their normalized data accordingly.

With the income data consistent, I present two regression models with which to interpret these data:

1.   LN_NORMINC = α + ß1 (GERMANY) + ß2 (POLAND) + ß3 (SLOVENIA) + ß4 (SWEDEN)

2.   LN_NORMINC = α + ß1 (GERMANY) + ß2 (POLAND) + ß3 (SLOVENIA) + ß4 (SWEDEN) + ß5 (EDUCATION) + ß6 (GE_EDU) + ß7 (PL_EDU) + ß8 (SL_EDU) + ß9 (SW_EDU)

I created dummy variables for each of the five countries which allows us to select and isolate particular countries relative to the United States in each of the regression models. Model 2 introduces interaction variables as well, to address the impacts of education on each of these countries individually. Table 1 explains these variables.

Table 1
Summary Table of Variables

Variable	Description
LN_NORMINC	Natural logarithm of normalized, annual, post-tax income (2010 USD)
GERMANY	Germany = 1, Other = 0
POLAND	Poland = 1, Other = 0
SLOVENIA	Slovenia = 1, Other = 0
SWEDEN	Sweden = 1, Other = 0
EDUCATION	Continuous measure of education; on its own, represents the returns to education in the USA
GE_EDU	Returns to education in Germany, relative to the USA; Germany = 1, Other = 0
PL_EDU	Returns to education in Poland, relative to the USA; Poland = 1, Other = 0
SL_EDU	Returns to education in Slovenia, relative to the USA; Slovenia = 1, Other = 0
SW_EDU	Returns to education in Sweden, relative to the USA; Sweden = 1, Other = 0

Source: ISSP

I use the natural logarithm of income rather than the normalized measure of actual income as the dependent variable here because income tends to be non-linearly distributed. By taking the natural logarithm, I effectively linearize the distribution of income; this allows for a more accurate regression analysis without having to implement a different type of regression.

Model 1 expresses the average levels of income in each country, relative to the United States. This does not provide much insight – certainly nothing that we could not gather through other means – but lays the groundwork for the second regression. The coefficients in Model 2, on the other hand, allow us to calculate the degree to which education impacts these differences in income, relative to the United States. With these we can compare the returns to education in each of the five countries.

Further, running this regression in two years expands the capacity of these models' analytical power. By comparing the results from both 2002 and 2012 side by side, we can view the relative changes in education's effects over time and derive the changes in the returns to education in each of these countries. As per the conversation in Section II, I hypothesize that these returns rise from 2002 to 2012.

IV. Results
A. Descriptive Statistics & Model 1 Regression Results

As these data were conducted through surveys, not all individuals provided data for all fields. In the case of this analysis, I excluded any education data that did not fall in line with the continuous measure I use here. I also excluded individuals that did not provide income data. There were surveys in which the highest option for reporting income read something along the lines of '900,000 LCU and above.' In these cases, I recoded the values so that the lower bound registered as the respondent's income. After controlling for gaps in relevant data, the sample sizes for each country fell. Table 2 shows the numbers of relevant respondents in each country after adjusting for these missing values.

Poland is the only country in which the sample sizes fell by particularly large margins with these controls, dropping by about 60% in both years. As such, it is also the country with the smallest sample pool. However, all of these countries still have enough samples to be considered relevant for this analysis.

Table 2
Average Earnings & Education (2002 & 2012)

	2002			2012		
Country	Avg. Income	Avg. Edu.	n =	Avg. Income	Avg. Edu.	n =
United States	$26,191.76	13.49	780	$23,409.57	13.57	771
Germany	$14,232.74	11.11	1047	$17,497.27	12.15	1478
Poland	$3,363.37	10.79	480	$6,502.23	12.49	376
Slovenia	$8,007.23	11.48	652	$9,566.28	12.14	667
Sweden	$23,037.99	12.14	877	$21,328.51	12.76	910

Source: ISSP

Table 2 also shows average income and average educational attainment in each of the five countries. These measures can be calculated through the application of Model 1 and Model 2 (presented in Section III), but Table 2's data were collected through descriptive statistical methods. It is important to note here that average education rose in each of these countries – considerably more so in Germany and Poland, where average educational attainment rose by over one year.

An application of Model 1 (see Table 3) yielded income measures that consistently scored within $4 of those obtained through descriptive statistics. In all but the two richest countries here, average income rose from one period to the next. This reduction in earnings within the United States and Sweden likely relates to the changes in wage distribution resulting from the financial crisis in the late 2000's. There exists evidence suggesting that income levels in the United States have stagnated through the 21st century to this point (Mischel & Davis, 2015) – for instance, the Federal Reserve Bank of St. Louis suggests that levels of household income in 2012 are actually lower than they were in 2002 (St. Louis Fed).

Table 3

Model 1 Regression Results

Variable	β_{2002}	β_{2002}
α	10.173***	10.061***
GERMANY	-0.61***	-0.291***
POLAND	-2.053***	-1.281***
SLOVENIA	-1.185***	-0.895***
SWEDEN	-0.128***	-0.093**
	n = 3835	n = 4201
	r^2= 0.421	r^2= 0.209

***Significance at .01 level   **Source: ISSP**
**Significance at .01 level
*Significance at .05 level

The most drastic change, however, was in Poland where average income nearly doubled over the course of the decade. During the global financial crisis, Poland experienced surprisingly negligible change in unemployment – it actually fell slightly between 2007 and 2009. Further, its GDP expanded dramatically, growing by nearly 6% in the same period (Amable & Ken, 2011) This is partly because it adopted the concept of the short-time work scheme from countries like Germany, Austria, and Japan, which effec-

tively limited the number of workers who were laid off as a result of the economic recession.

But Poland's economic policy as a whole also differed from that of other OECD countries. For example, unlike several other European states, its currency was not tethered to the Euro. Countries with strong currencies on the world market (IE: US Dollars, Euros, etc.) and those countries who tied their currencies to said strong currencies seemed to experience much harsher recessionary effects. Poland, in having complete control over its currency, was able to respond more effectively to the recession (Klein, 2012). This lack of tethering also allowed Poland to keep its debt relatively low prior to and throughout the financial crisis (Pleitgen, 2010).

Also important to note is that Poland, Slovenia, and East Germany were part of the Communist bloc up until just before the 1990's. The first several years of economic transition from controlled systems to more laissez-faire economies saw dramatic reductions in overall economic output throughout the eastern bloc (European Commission, 2014); in this period, things like union membership shifted from being compulsory to being entirely optional (Visser, 2006). Thus they experienced extreme exchange rate volatility and large changes in CPI (World Development Indicators). This instability through much of the 1990's justifies the relatively low income levels in each of these countries (and the surprisingly low average income measures within Germany, since half of the economy was transitioning). Most of these countries recovered extremely well through the later 1990's to the onset of the global financial crisis (Carter, 2007). But the large-scale changes occurring from the mid 1990's through to 2012 are very likely reflected in these data – so, both the low levels of income and the high degrees of change from one period to the next can be accepted.

B. Model 2 Regression Results

The findings on which we must primarily focus, however, stem from Model 2's results, presented in Table 4. Here, the first four variables are applied in the same way as in Model 1, the difference being that they no longer provide a measure of average income. Instead, α, GERMANY, POLAND, SLOVENIA, and SWEDEN refer to only the non-educational components of respondents' income.

To examine the returns to education, we must consider the final five variables presented. Taken while all dummy and interaction variables equal zero, EDUCATION provides us the returns to education within the United States; by multiplying ß6 by a given level of education – say, 12 years – and adding that to the constant, we can calculate the expected earnings of an individual in the United States with 12 years of education.

Table 4
Model 2 Regression Results

Variable	ß_{2002}	ß_{2012}
α	9.022***	8.284***
GERMANY	-0.285	0.876***
POLAND	-2.116***	-0.616***
SLOVENIA	-0.537***	0.107
SWEDEN	0.581***	1.124***
EDUCATION	0.083***	0.128***
GE_EDU	-0.01	-0.077***
PL_EDU	0.019	-0.047***
SL_EDU	-0.04***	-0.062***
SW_EDU	-0.047***	-0.085***
	n = 3826	n = 4192
	r^2= 0.469	r^2= 0.286

***Significance at .01 level Source: ISSP
**Significance at .01 level
*Significance at .05 level

The same idea applies for the other countries when their respective dummy variables and interaction terms are triggered. In this case, rather than simply combining α and ß6, we must – say, for the case of Germany – include α, ß1, ß6, and ß7. Examining ß7 on its own tells us how Germany's returns to education compare to those of the United States; ß6 and ß7 taken in tandem reflect the returns to education in Germany in an abso-lute sense.

But we are not concerned with the full power of this model. Instead of focusing on the actual earnings individuals are expected to obtain, we will examine the changes in the returns to education – as measured by the coefficients attached to EDUCA-TION, GE_EDU, PL_EDU, SL_EDU, and SW_EDU. Table 4 presents these returns as they fall relative to the United States' returns to education.

Table 5 presents each country's returns to education in an absolute sense.

Table 5
Returns to Education

Country	2002	2012	Change
United States	0.083	0.128	+ 0.045
Germany	0.083	0.051	- 0.032
Poland	0.083	0.081	- 0.002
Slovenia	0.043	0.066	+ 0.023
Sweden	0.036	0.043	+ 0.007

Source: ISSP

It is important to note that, in Table 5, the interaction variables for GE_EDU and PL_EDU were insignificant in 2002. The country dummy variable for both GERMANY in 2002 and SLOVE-NIA in 2012 were also insignificant. But none of this affects the ap-plicability of the model. Since we are only focused on the returns to education, we are not interested in calculating expected income; thus the insignificance of GERMANY and SLOVENIA is irrelevant. More importantly, the insignificance of GE_EDU and PL_EDU does not render our model useless for these two countries either. The irrele-vance of these interaction terms merely means that the returns to education in Germany and Poland were not significantly different from those in the United States. And so, in calculating the values presented in Table 5, we simply replace the coefficient values in for GE_EDU and PL_EDU with zero, effectively setting them equal to the returns in the United States.

Table 5 shows us that the returns to education rose in the United States, Slovenia, and Sweden and that these returns fell in both Germany and Poland. The growth in returns was largest in the United States, increasing by 4.5%. They grew by only half as much in Slovenia, rising 2.3% over the decade in question, and less than a third as much in Sweden. But more interesting is the fall in returns within Germany and Poland. The reduction in

returns in Poland is small enough to be considered negligible, registering at 0.2%, but Germany's change was only about 10% less than the United States – just in the opposite direction.

V. Findings & Implications

The results of my model do not support my hypothesis. They suggest that the re-turns to education rose in three countries, but fell in both Germany and Poland. This is unexpected, considering I hypothesized that returns would rise in all countries, but some of this may be explainable if we consider the particular circumstances in each of these countries. Subsection A of this section explores three potential explanations for these unexpected results.

A. Possible Explanations for Unexpected Findings

The first is that I may have been wrong to consider Poland's data representative. Subsection A of Section IV noted that the sample size in Poland was relatively miniscule and that data from over 60% of respondents were excluded in this analysis. Further, the measures of average income in Poland were surprisingly different from one period to the next. All of this might signal that these data were not as reliable as I took them to be when conducting my analysis. Similar explanations could be extended to Germany in that the ISSP data provided information on East and West Germany individually; in my analysis I combined these two measures, which may have affected the sanctity of the data. Additionally, both coefficients attached to Germany in 2002 were insignificant. This might also suggest flaws in those data.

A second consideration is the handling of the global financial crisis. We dis-cussed in Section IV how Poland responded to economic depression. Poland's short-term work schemes were based largely off of those implemented in Germany – a country that also fared well throughout the crisis. As mentioned earlier, these short-term work schemes effectively limit the number of employees an employer can fire, instead causing employers to cut employee work hours or salaries. This (1) would have a notably different effect on income inequality than would individuals losing their jobs altogether and (2) could directly affect the returns to education.

In the first case, inequality would increase as unemployment rises – when some individuals lose their jobs – or as individuals exit the labor force entirely. But these short-term work schemes limit the growth in unemployment and thus decrease the ac-companying growth in income inequality. It is likely that average income would suffer from these actions, but inequality would not fall. And since our hypothesis is based on the assumption – presented through the Paradox of Progress – that inequality is increasing as educational attainment increases, the falling returns to education might not be counter to the concepts upon which I constructed my hypoth-esis; instead, my assump-tions may have simply been incorrect. With regards to the second possibility, that these short-term work schemes might directly affect the returns to education, returns might fall, in part, because employers could not fire employees. To maintain all of their workers, employers would be forced to reduce employees' salaries. In this case, the reduction in incomes would cause the dollar-value of education to fall. The effects of laying workers off would likely serve to increase the returns to educa-tion, because employers might be more inclined to retain more-educated employees; so, by reducing the growth in unem-ployment, Germany and Poland might have induced a reduction in the returns to education.

A final possible explanation for these un-predicted changes relates to the increases in average education. Over this ten year period, individu-als obtained, on average, 1.04 and 1.70 years more education in Germany and Poland, respectively. Slovenia – the country with the next-highest degree of change – saw an increase in average schooling of only 0.66. Such a large rise in education in this time period might cause employers to value education less, since it would be so much more commonplace. While each of these three potential explanations holds some weight, none of them is strong enough to discred-it my analysis.

B. Additional Findings

Also interesting is that there was no consis-tent pattern relating a country's level of development to changes in the returns to education within it. The United States, Sweden and Germany experienced radically different changes. The US's returns grew by the largest margins while Germany's fell by a similar

degree. While Sweden's returns to education rose like the United States', it did so at less than a sixth the magnitude. Slovenia's and Poland's changes were also not particularly comparable, as Slovenia's returns grew notably while Poland's fell minimally. This supports Bourgignon, Ferreira, and Lustig's (2005) dismissal of economic development as a signal of educational relevance – first discussed in Subsection A of Section II.

C. Recommendations

These findings suggest that education is most valuable in the United States. But it would be hasty to recommend that other countries tailor their educational systems to more closely resemble the United States', as these findings do not shed light into why the returns to education change. Just as they might suggest that a United States education is more valuable than a German education, these results might simply reflect that education is considered more valuable within the US labor market than in Germany's. This is a primary avenue for further research: what are the causes for changes in the returns to ed-ucation? Exploration of both (1) the value placed on education in different labor markets and (2) the degree to which different educational systems actually improve human capital would shed light into this question.

Further, these results suggest that levels of development do not impact the returns to education. But, these countries are all fairly developed. Consideration of a broader range of countries would help our understanding of how education is valued in different types of labor markets. Specifically, greater focus on the returns to education within the lesser-developed world could show whether these returns are significantly different when larger differences in development are present.

But my largest recommendation for future research is that the Paradox of Progress not be assumed to be true. Subsection A of this section presented the possibility that income inequality actually fell within Germany and Poland, which would suggest that the results of Model 2 actually comply with the theory and findings expressed in Section II and that the assumptions on which my hypothesis were based – rather than my explanations for changes in the returns to education – were flawed.

My findings alone do not yield policy recommendations, but the research I suggest might. With an understanding of which education systems are most effective at developing human capital, we could suggest that certain systems be adopted while others be abandoned. With a better understanding of how different labor markets value education, we could recommend particular levels of education for individuals looking to join the labor force in certain markets. And with an understanding of education's relationship to income inequality, we might better understand the ways in which education increases or decreases inequality or the means through which inequality affects the valuation of education in particular markets.

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