



Labour Market Matters

Special points of interest:

- Study employs method to allow for changes in both human capital prices and quantities to play a role in explanations of growth and increased inequality.
- Using data from Major League Baseball, researchers find that the “Right Mix” may be just as important as talent for success in team situations.

“The separate identification of the price and quantity of human capital is a strong step towards the study of the growth in living standards around the world.”



Chris Robinson
(University of Western Ontario)

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Productivity, Growth and the determinants of Human Capital “Prices”

Separate identification of the price and quantity of human capital has important implications for understanding key issues in labor economics and macroeconomics as the flow from human capital is by far the most important input in the world economy. Assessing the contribution of human capital to output, living standards and growth is, however, hampered by conceptual and measurement problems. It is well recognized that the quantity of the labor input cannot simply be measured by total hours, but rather a measure of the quantity of human capital is required. In contrast, the literature addressing the recent rise in the skill premium and inequality in the U.S. requires estimates of prices. A CLSRN study by Audra J. Bowlus and Chris Robinson (both of the University of Western Ontario) entitled **“Human Capital Prices, Productivity and Growth”** ([CLSRN Working Paper no. 89](#)) provides price and quantity series for four different education groups in the US from 1963 to 2008 allowing for changes in both human capital prices and quantities to play a role in explanations of growth and increased inequality.

Bowlus and Robinson argue that there are a number of “types” of human capital, differentiated by education (dropouts, high school graduates, some college and college graduates) that remain the same over time. This allows for a meaningful examination of changes in quantities within type over time. An important aspect of their framework is the

incorporation of “vintage effects” that can be interpreted as differences in the quantity of human capital associated with each type across birth cohorts due to selection effects and technological improvements in human capital production functions.

Using data from the U.S. March Current Population Surveys, the researchers find, surprisingly, that the prices of all four types of human capital moved closely together. From 1963 to the mid-seventies, the prices increased around 10 to 15 percent. However, from the peak in the mid-seventies there was a major decline in the prices of over 15 percent, with a substantial decline until the recovery from the recession in the early 1980s followed by a further decline until another period of recovery from the recession in the early 1990s. By the early 2000s the price series are all relatively stable. Using these price series, the implied true growth of the labor input over the 1975 to 2001 period is much larger than conventional measures. The undercount of the increase in the labor input by conventional measures then results in a substantial over-estimate of total factor productivity growth.

The study’s finding of a high correlation between the price series for high school graduates and for college graduates implies only modest changes in relative skill prices. This finding is puzzling given the well documented



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increase in the college premium in the 1980s and 1990s. However, the researchers decomposed the relative wage increase for younger workers with a college degree compared to high school graduates reported in Card and Lemieux (2001) and found that about two thirds of this increase was due to an increase in relative quantities and only one third to an increase in relative prices. The relative quantity changes are then shown to be consistent with relative vintage effects, especially selection effects, due to large changes in the fraction of birth cohorts graduating from college.

There is quite general agreement that the growth of per capita human capital plays a significant role in the determination and improvement of living standards. The separate identification of the price and quantity of human capital is a strong step towards the study of the growth in living standards around the world.

The “Right Mix” may be just as important as pure talent, study finds

When National Hockey League (NHL) players were allowed to compete for the first time at the 1998 Winter Olympics, on paper, the Canadian team had a lock on the Gold Medal. The 1998 Canadian Men’s Olympic team had some of the best hockey talent in the history of the game – including Wayne Gretzky: possibly the greatest hockey player of all time – and yet the Canadians sputtered to an inconceivable 4th place finish, defeated by teams composed mostly of amateur and semi-professional players from the Czech Republic and Finland. Similarly, on the opposite end of the spectrum, the 2004 Greek national team amazingly won the European Cup Tournament without a single superstar and against the predictions of the world’s best soccer pundits. How is it possible then that teams full of superstars can be defeated by seemingly less talented ones?

A paper by CLSRN affiliates Kerry L. Papps (University of Oxford), Alex Bryson (National Institute of Economic and Social Research and Centre for Economic Performance) and Rafael Gomez (University of Toronto and



Kerry L. Papps
(University of Oxford)

London School of Economics) entitled **“Heterogeneous Worker Ability and Team-Based Production: Evidence from Major League Baseball, 1920-2009”** (CLSRN Working Paper no. 75) finds that teams with the right mix of skill sets may be more successful than teams simply full of superstars.

Using aggregated team level data for the period 1920-2009 on annual performance and biographical data for every player over the entire history of major league baseball, the authors find teams with a diversity of complementary skill sets and a moderate distribution of player skill, without too great or too little spread between the best and worst players, win more games than teams with either too low or too high a skill spread. The findings, of course, do not negate the importance of average team talent, but conditional on the individual ability of players, teams with an optimal spread of human capital do better than teams with little or too vast a difference between top and bottom performers.

“[T]he right mix of skill sets may be more successful than teams simply full of superstars”

Benefits in team performance emanating from a moderate distribution of skill diversity could occur for several reasons. First, there is often a gap between the capability of a top player to perform some task during a game and his willingness to do so. A team full of only high-performing batters might not be the easiest group to

convince to ‘take one for the team’. The sacrifice play – whether it is designed to move a batter closer to home plate or to generate a run – is at times integral to the manager’s ability to ‘manufacture’ runs. In other sports such as hockey, a classic example of the “sacrifice play” can be seen in the pairing of Wayne Gretzky and Dave Semenko – a less skilled player, whose primary role was to be Gretzky’s on-ice bodyguard. Without Semenko clearing space (and thereby forfeiting his own point totals), Gretzky might not have been as successful – or his career could have been cut short due to injury. Phil Jackson – widely-regarded as



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the best coach in the history of the National Basketball Association (NBA) – intrinsically understood the importance of balancing talent and finding the “right mix” of players. Indeed, as quoted by the authors, he says¹:

“... it’s the unselfish players – players who are more interested in reading what’s happening and keeping the flow going on the floor – who are the

most valuable players that you have. They may only be averaging seven points a game... but their ability to play in a selfless manner gives the team its real opportunities... That’s why teams that are less talented but more selfless and group-oriented can have more success.”



Rafael Gomez
(University of Toronto and the London School of Economics)

The results of this study can be generalized to other “non-sport” related team-based situations or workplace Human Resource functions as well. Take for example the firms hiring decision: should a firm hire employees solely on the basis of their individual ability, irrespective of the effect this may have on the distribution of skills? This is often the underlying assumption in HR recruitment methodologies designed to uncover individual talent. The implications of this research, however, suggest that firms involved in teams-based output should manage the selection of workers so as to prevent too wide a gap opening up between the best and poorest performers.

¹ Interview at: http://findarticles.com/pl/articles/mi_m1058/is_n35_v113/ai_18965404, accessed on March 12, 2010. Full text of article from *Christian Century Magazine*, December 4, 1996.

Endnotes

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