Labor's Share in Hungary*

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This paper examines labor's share of income in Hungary. We find that the trend in labor's share is substantially influenced by the treatment of self-employment; self-employment has declined significantly because of both shifts across sectors and reductions within sectors. Hungary's labor share has been roughly constant when labor compensation excludes the self-employed. The labor share with an imputation for the self-employed has declined, but data quality concerns and ambiguities surrounding the appropriate imputation make it difficult to reach definitive quantitative conclusions about the extent of the decline. Policymakers and researchers should be cautious in interpreting the apparent shifts in Hungary's labor share.

Journal of Economic Literature (JEL) Classification: E01, E25, J30

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1. Introduction

The first of Kaldor's stylized facts of economic growth is that the shares of income attributable to labor and capital are roughly constant over time *(Kaldor 1961)*. That stylized fact, however, has come under increased scrutiny over the past decade or so, with debate over whether and why the capital share has risen and the labor share declined. Professor Kaldor was born (with the name Kaldor Miklós) in Budapest, and the share of income attributable to different factors has important macroeconomic consequences, so it seems particularly appropriate to examine labor's share in Hungary in a publication associated with the nation's central bank.

The *OECD (2012)* has recently noted that labor's share has declined in Hungary, with a larger fall in the overall labor share in Hungary than in the United States and the decline in Hungary's business-sector labor share exceeding every other of the 26 countries examined except Finland. As we discuss, however, the extent of any decline in the labor share is not entirely clear, because of ambiguities regarding how the self-employed should be treated as well as uncertainties in the underlying data.

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At the same time, a decline in labor's share in Hungary would not be particularly surprising: labor share has been declining in some of the fastest growing economies in the world over the past decade.

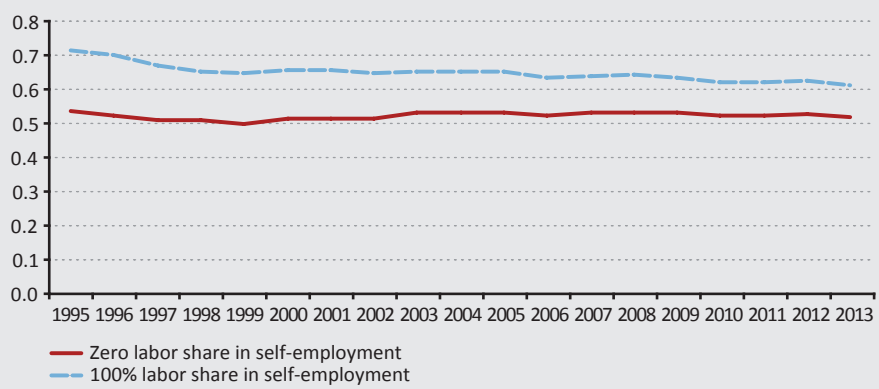
As a capsule summary of the self-employment issue, *Figure 1* shows the labor share of gross value added in Hungary under two extreme assumptions: that the labor share among the self-employed is either zero (mixed income is attributed entirely to capital) or 100 percent (mixed income is attributed entirely to labor). Under the former assumption, there is a 1.5 percentage point decline in the overall labor share; under the latter, the share declines by a sizeable 10.5 percentage points. Conclusions about whether the overall share is roughly steady or falling sharply thus depend sensitively on what intermediate assumption is used to attribute the share of self-employment income that represents labor compensation.

In this article, we discuss the broader international literature about labor's share, examine trends within Hungary while assessing issues of both data quality and mixed income, and analyze the role of changes within and across sectors of the Hungarian economy. Our conclusions are:

(a) labor's share measured only using employees and not the self-employed has remained roughly constant over time;

(b) labor's share including the self-employed has indeed likely declined, but sufficient concern surrounds data quality and the self-employment imputation that the quantitative extent of any such decline is unclear;

Figure 1.
Hungarian Labor Share
(1995–2013)



Source: Statistical Office of European Communities, Haver Analytics

(c) self-employment has declined markedly, both because of shifts across sectors and reductions in self-employment rates within each sector;

(d) labor's share in industry has declined noticeably;

(e) net capital income has risen as a share of national income; for gross capital income, the share excluding real estate has increased notably.

2. Background on labor's share

In 1995, Professor Larry Katz of Harvard, a leading labor economist, summarized the view at the time that, "It is remarkable how constant labor's share has been over the last 150 years. This is one of the strongest regularities of advanced economies" *(Bradsher 1995)*. This view, reflected in Kaldor's first stylized fact, was also the basis on which the Cobb-Douglas production function was introduced *(Cobb–Douglas 1928)*.

However it has become increasingly clear that labor's share in recent decades has deviated from this pattern, leading to much discussion and debate. According to OECD data, the median labor share in member countries fell from approximately 70 percent in 1980 to roughly 64 percent in 2012. During that period the measured labor share in the United States fell by 5.9 percentage points, in Germany by 7.3 percentage points, and in France by 11.1 percentage points.

2.1. Causes of decline in measured labor share

An IMF paper *(Jaumotte–Tytell 2007)* found that labor globalization and technological change were about equally responsible for the decline in labor shares in Anglo-Saxon countries (U.S., U.K., Canada, and Australia), but that technology was the more important factor in continental Europe and Japan. Other contributing factors include the weakening of labor unions and privatization.

The *OECD (2012:110)* estimated that total factor productivity growth and capital deepening may be responsible for "as much as 80% of the average within-industry decline of the labour share in OECD countries between 1990 and 2007." Advances in technology have promoted automation and thus greater substitution between capital and labor. Globalization is estimated to account for another 10 percent of the fall.

In his book *Capital in the Twenty-First Century, Thomas Piketty (2014)* sparked a debate about outsized returns on capital, an issue tightly linked to labor share. This debate has involved questions ranging from whether the decline in labor share is temporary or permanent; whether it reflects a broader pattern associated with technological change; and whether it reflects growing elite power and rent-seeking behavior.

It could well be that the decline in labor share which has been witnessed is a transient phenomenon connected with the adjustment mechanism to new technology associated with the internet revolution and the fact it facilitates globalization; the effective global labor supply has expanded more dramatically than the effective global capital supply over the past two decades. At least conceptually the Marxist concepts that arose during the industrial revolution were based on observations about the low returns to labor, something which itself may have been a transient adjustment phenomenon connected with the rapid speed of change at that time. We simply do not have enough data or experience yet with the recent labor share declines to know whether or when the share will recover. Nor can we be clear precisely how the next major technological wave of robotics will affect factor shares.

It is also noteworthy that while a declining labor share has been highlighted in many circles as a problem, international experience suggests it may also be a symptom of necessary investment and changes in economic activity. Nothing illustrates these points better than the case of China. The decline in labor's share in China has been particularly significant since the 1990s amid one of the fastest growth rates in observed economic history. Labor's share in China is now under 40 percent, much lower than Hungary. Some of the change in China involves sectoral composition. Manufacturing has a much lower labor share than agriculture, and a movement of workers into manufacturing has thus driven labor's share lower. In addition, increasing investment and capitalization of production has reduced labor's share.

The basic point is that although developed economies will have higher labor shares than developing countries, the process of growth requires investment and sectoral reallocation, which leads to a decline in labor share for some time. *Guerriero (2012)* also notes that low labor shares are seen in economies with high dependence on natural resources. The process of investment in natural resource extraction is beneficial for economic growth yet it can result in a decline in labor share because of the investment required.

2.2. Measurement issues: role of housing and depreciation

In addition, several methodological issues arise when interpreting changes in labor's share. For example, a paper by *Benjamin Bridgman (2014)* finds that although gross labor share in the United States has fallen to an historical low, the net labor share (excluding depreciation and taxes on production) has remained within its historical range. Specifically, gross labor share fell by 9 percent between 1975 and 2011 while net labor share fell by 6 percent. Depreciation is primarily responsible for this difference.

The role of housing and land raises other issues. A recent Brookings paper by *Matthew Rognlie (2015)* of MIT raises an important issue regarding the conventional

wisdom that capital's share has increased at the expense of labor. Rognlie finds that the long-term increase in the net capital share in large advanced economies stems entirely from housing. For sectors other than housing in G7 countries, the capital share fell from 1948 until the 1970s and has only partially recovered since. The role of housing has increased dramatically over this period, contributing 10 percentage points to net capital income today compared to 3 percentage points in 1950.

2.3. Data quality

The quality of data required to compute labor's share is a significant issue in many countries. These data issues led *Karabarbounis and Neiman (2013)* to focus assessment only on corporate income, as it is more reliable than measures that include self-employment income. In addition to the issue of appropriate imputation of capital income to the self-employed, the actual level of self-employment income itself is notoriously unreliable in most countries due to under-reporting of income. In Hungary, *Benedek and Lelkes (2011)* find particularly low reporting of income of the self-employed, creating a high degree of uncertainty over what has happened to the self-employed income at the heart of many of the issues we are examining.

More fundamentally, the OECD and Eurostat data on labor's share that is the subject of much analysis and policy debate is quite unusual when looked at the granular level. When we looked at the relevant data for Eastern European countries at the sectoral level, there were some significant puzzles. In Slovenia for instance, the sectoral labor share of agriculture, forestry and fishing was not just over 100 percent every year since 1995, but exceeded 200 percent in most years, with a peak of 269.9 percent in 2009. Not to be outdone, in Romania this measure of labor share reached a peak of 660 percent in agriculture in 2010. These figures may have economic explanations in some cases (such as large subsidies for agriculture), but the use of unreliable survey data also plays a role.

Noise in the data is also reflected in dramatic changes over time. In Bulgaria, labor's share in agriculture, forestry and fishing rose from a reasonable-sounding 70.8 percent in 2000 to 167.6 percent in 2014. And there are dramatic shifts in some cases from one year to another. In Lithuania, the labor share in the same sector fell in one year from 106.2 percent to 73.2 percent. In Romania in one year (from 2008 to 2009) the labor share of manufacturing went from 57.4 percent to 36.7 percent.

In addition, when one looks at similar sectors across Eastern European countries, there is more variation in labor's share in economies that one would think are more similar. In Hungary, for instance, manufacturing in 2010 had a labor share of 48.3 percent. In Romania it was just 33.5 percent and Slovenia it was 67.9 percent. Manufacturing is just the beginning of the puzzles. Construction in Romania in 2010 had a labor share of 33.5 percent, yet in Hungary it was 65.3 percent. Our intuition is that the fundamental division of income should not be that different across these

sectors in these different countries. *Karabarbounis and Neiman (2013, Figure 6)* report that a lot of the movement in labor's share in Eastern European countries is within sectors relative to other countries, further reinforcing the point that sectoral data quality is potentially a big issue.

Given the degree to which these data irregularities are pervasive in the published OECD/EUKLEMS data it would be helpful to put much stronger caveats into reports and claims on the decline in labor's share. The apparently smooth and reasonable movements in labor's share at a country level that are reported have substantial compositional issues beneath the surface that could well invalidate the aggregate conclusions or at a very minimum add a high degree of uncertainty to any conclusions reached.

3. Trends in Hungarian labor share

With the caveats above in mind, we begin to examine the labor share in Hungary by presenting the data on gross value added in four categories: compensation to employees, mixed income, net capital income, and depreciation. In these calculations, gross value added and compensation to employees is based on data from the Hungarian Central Statistical Office and consistent with OECD and Eurostat data. Depreciation is measured as the consumption of fixed capital in the national income and product accounts, and mixed income is taken from the Hungarian Central Statistical Office series on mixed income in the household sector. Net capital income is then computed as the residual.

As *Figure 2* shows, the shares of gross value added attributable to compensation of employees and to depreciation have remained roughly constant since 1995. The share attributable to mixed income (that is, self-employment) has declined significantly, and the share attributable to net capital income has risen noticeably.

The pronounced decline in mixed income as a share of gross value added, and the lack of any trend in employee compensation by itself, highlights the issue described in the introduction. In particular, mixed income declined from 18 percent of gross valued added in 1995 to 9 percent by 2013. How such self-employment income is treated can therefore substantially affect conclusions about the trend in the overall labor share.

3.1. Self-employment and mixed income

In its calculations, the OECD assumes that mean hourly compensation among the self-employed is equal to mean hourly compensation among employees, and therefore scales the data on employee compensation by the ratio of total hours to employees' hours to arrive at an overall labor compensation figure, which is then compared to gross value added. We update the OECD data using this methodology in *Figure 3,* with the modification that we assume mean annual (instead of hourly)

Figure 2.
Factor Income shares
(1995–2013)

Source: Statistical Office of European Communities, Haver Analytics; Hungarian Central Statistical Office

Figure 3.
Labor's Share under OECD Self-Employment Assumption
(1995–2014)

Source: Statistical Office of European Communities, Haver Analytics

compensation is the same for the employed and self-employed. The results show a noticeable decline in labor's share given the assumption regarding self-employment. The fundamental reason, as shown in *Figure 4,* is that the share of the self-employed in total employment has fallen roughly in half since the mid-1990s.

Figure 4.
Self-Employment as a Share of Total Employment
(1995–2014)

Note: Figure shows the difference between total employed and number of employees, as share of total employed
Source: Statistical Office of European Communities, Haver Analytics

This decline in the self-employment rate appears to be caused partially by a decline in agriculture's share of total employment and a rise in professional and related employment over that period of time. Appendix *Table 1* shows the employment shares by sector by year, and *Table 2* shows the self-employment rate within each sector by year. As the table shows, the share of total employment in agriculture fell from 15 percent in 1995 to 7 percent in 2014. This sector, as shown in *Appendix Table 2,* has a disproportionately high rate of self-employment, in excess of 50 percent. By contrast, employment in the professional, science, technology, and administration sector rose from 3 percent in 1995 to 9 percent in 2014.

There have also been declines within sectors. The self-employment rate fell from 19 percent in trade, travel, and food services to 8 percent; it fell from 14 percent to 8 percent in professional, science, technology, and administration, and from 17 percent to 12 percent in construction. It rose in some other sectors, such as financial insurance. In general, however, self-employment has become less prominent within most sectors.

The shift across sectors (and in particular away from agriculture and towards professional and related services) and the reduction within sectors can each explain about half of the decline in self-employment for Hungary as a whole. For example, weighting the 1995 self-employment rates by 2014 employment shares by sector yields an overall self-employment rate of 13.5 percent; conversely weighting the

2014 self-employment rates by 1995 employment shares yields an overall rate of 13.6 percent. In other words, the shifts of employment between sectors can explain about half of the decline in the self-employment rate for the nation as a whole, and a reduction in self-employment rates within sectors explains the other half.

A paper in Hungarian by *Hárs (2012)* has analyzed in detail the decline in self-employment in Hungary. The paper finds that two factors played an important role in the movement of self-employment over the period since the mid-1990s. The first was the decline in cooperatives primarily in agriculture that accounted for roughly 4 percent of total employment. As members of the self-employed cooperatives aged and retired, this form of self-employment declined. The second is the share of entrepreneurs and partnerships in total employment in Hungary, which declined slightly.

Taxation is also a potentially important issue as tax regimes have a uniquely powerful effect on the supply of self-employed labor. And in the period under question tax rates changed every year and in two cases within the year. Over the relevant period, the income taxes and social security contributions of the self-employed were stable as a share of GDP. Because the proportion of self-employed shrunk over the period, the implication is an implicit rise in the tax burden on the self-employed. So increases in taxation of the self-employed could well have been driving at least part of the movement away from self-employment in Hungary.

As noted earlier, the sensitivity of the results to how self-employment income is treated is not unique to Hungary. *Gollin (2002)* emphasizes the crucial role played by self-employment income in international analyses of income shares. *Marta Guerriero (2012)* looked at labor share in a panel of 89 countries since the 1970s and found that treatment of self-employment income had a material effect on measurements. Guerriero calculated six different measurements of labor share, each with a different approach to self-employed income. In the case of Hungary, these figures ranged from 58 percent to 76 percent.

In the United States the official BLS figures assume, as do the OECD figures for Hungary, that average wages of the self-employed and payroll employees are the same. A recent Brookings paper, however, shows that this assumption implies that the capital share of the self-employed would be negative in the 1980s. Two alternative measures (an "asset basis" measure which assumes that "returns to capital, as captured by its user cost, are the same for the capital used by the payroll-employed and that used by the self-employed", and an "economy-wide basis" measure that "assumes that the labor share in entrepreneurial income is the same as that for the overall economy") suggest that the BLS measure overstates the decline in labor share by one-third *(Elsby 2013:12)*.

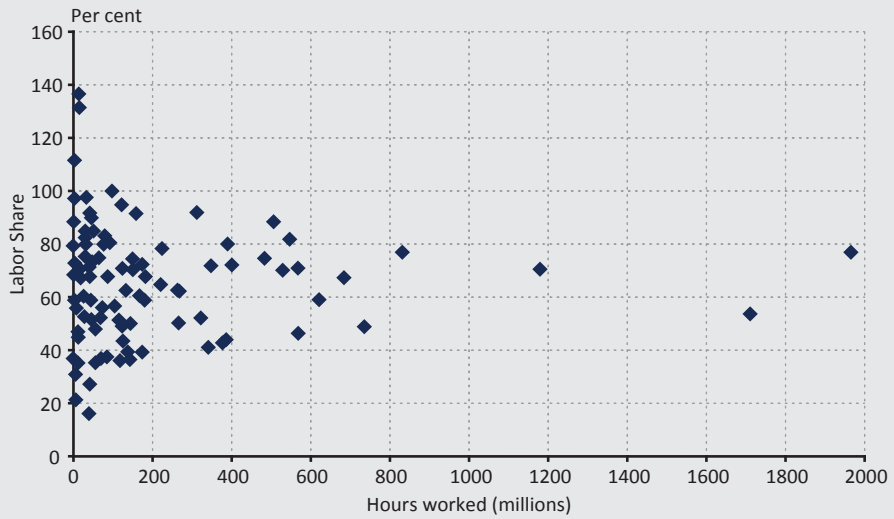
Figure 5 shows that for Hungary, the implicit capital share attributed to the self-employed by the OECD procedure appears much more reasonable than the Brookings results for the United States. In particular, *Figure 5* shows the residual between total mixed income and the implicit labor compensation attributed to the self-employed, divided by mixed income. This capital share varies between 25 and 40 percent, which is a more constrained range than for the United States. Figure 5 might be seen as attenuating concerns about how the self-employed are treated in the OECD calculations, but ultimately it does not answer the fundamental challenge: we do not know with certainty how to split income for the self-employed; self-employed income has fallen markedly in Hungary; and substantial potential therefore exists for misinterpretation of aggregate income shares depending on how self-employment income is treated. As we have noted above, for many countries in the world, the various ways of handling the self-employed do not substantially affect the trend, whereas for Hungary it is crucial.

Figure 5.
Implicit Capital Income Share for Self-Employed
(1995–2013)

Source: Statistical Office of European Communities, Haver Analytics

This concern is only underscored by examining the traditional methodology for the self-employed at the detailed sectoral level. *Figure 6* shows a scatter plot of sectoral total hours worked and the attributed labor share in that sector for 2007. As the figure shows, several sectors (such as telecommunications equipment and air transport) have labor shares in excess of 100 percent, many others have labor shares close to 100 percent, and several sectors (such as real estate activities) have labor shares below 30 percent. These patterns do not seem plausible, highlighting

Figure 6.
Sectoral Labor Shares by Hours Worked
(2007)



Source: EU KLEMS

concerns about both the underlying data and the methodology used to construct the labor share.

The bottom line is that the treatment of self-employment income affects the level, but not necessarily the trend, in the labor share if self-employment itself were relatively stable. Indeed, in most analyses of declining labor share such as *Karabarbounis and Neiman (2013)*, the treatment of self-employment seems to affect the level of the share, but it does not noticeably impact the trend. Hungary, though, is considerably different.

3.2. Role of housing

Hungary has one of the highest rates of home ownership in the world *(Wikipedia 2015)*. And the FHB housing index for Hungary (a measure of residential real estate prices developed by FHB Bank) rose by roughly a factor of four between 1999 and 2008, which for comparison is more than double the rate of increase in house prices in the overheated U.S. market during that period. However, some aspects of the Hungarian housing stock – such as expenditures as a percentage of disposable income – are below EU averages.

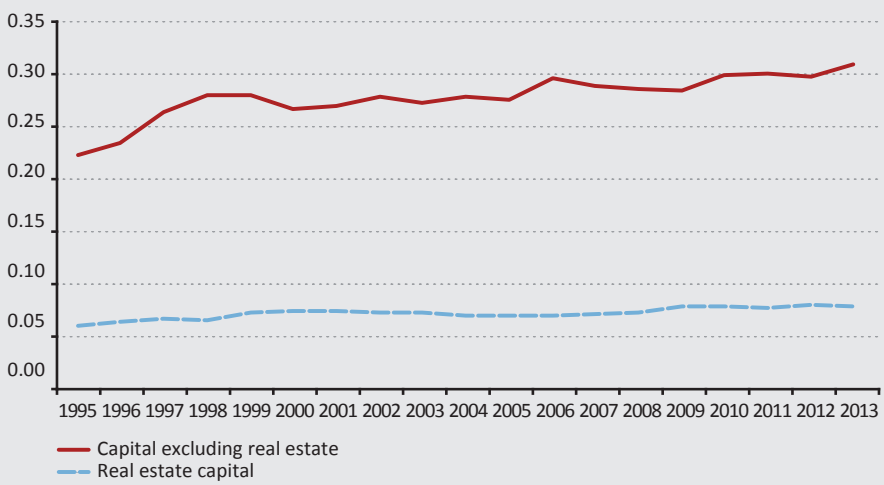
We lack complete data on net housing capital income in Hungary, and must therefore rely on approximations involving gross rather than net housing capital income. That is, we do not have data on the allocation of depreciation between

housing and non-housing capital, so we examine gross capital income rather than net capital income across these two components. One could potentially approximate depreciation on housing by imposing an assumption that all housing is owned by households and that households own no other fixed capital, and then proxying depreciation of the housing stock by the consumption of fixed capital by households. We prefer simply to examine gross capital shares here, however.

We separate gross capital income into two components: real estate and non-real estate. For real estate gross capital income, we subtract employee compensation from gross value added in real estate. *Figure 7* shows that, unlike for the United States and other industrialized economies, the capital share excluding real estate for Hungary appears to have risen significantly, and real estate capital income as a share of gross value added has risen modestly. This is somewhat puzzling given the relatively high rental yields on Hungarian property at the moment and the rapid rise in Hungarian property prices *(Global Property Guide 2015)*. But yields in the late 1990s in Hungary were yet higher, at over 10 percent.

As another perspective on the role of housing, *Figure 8* plots real estate value added (including employee compensation) as a share of total gross value added. As it shows, this ratio has not risen markedly, providing an additional though still

Figure 7.
Real Estate and Non-Real Estate Capital Income Shares of Gross Value Added
(1995-2013)



Source: Statistical Office of European Communities, Haver Analytics, Hungarian Central Statistical Office

Figure 8.
Real Estate Value Added as Share of Total
(1995–2014)

Source: Statistical Office of European Communities, Haver Analytics

imperfect check on the conclusion that housing has not played as dominant a role in income shares in Hungary as in many advanced economies, including the United States.

3.3. Trends in Labor's Share by Sector

Comparable data at the major sectoral level is unavailable for both self-employment and value added. One could proxy self-employment by using household income data by economic activity, but rather than adopting that approach, in this section we examine sectoral shifts in the ratio of employee compensation (that is, with no self-employment imputation) to value added. *Appendix Table 3* shows the share of gross value added attributable to each major sector, and *Appendix Table 4* shows trends within each sector in labor's share, measured only using employee compensation.

As Appendix Table 3 shows, the shares of value added by sector have been relatively stable. The share attributable to agriculture has declined, from 8 percent of total value added to 4 percent, and the share attributable to professional, scientific, and technical activities has risen from 6 percent to 9 percent. These shifts mirror those of the employment shares by sector. Other than those changes, the distribution of value added across sectors has remained roughly the same since the mid-1990s.

Appendix Table 4 shows the ratio of employee compensation to gross value added by sector. This has fallen substantially in industry, from 59 percent to 46 percent, and somewhat less dramatically in construction, from 55 percent to 48 percent. It

has risen substantially in professional, scientific, and technical services, and also in information and communications and in financial insurance.

The between-sector and within-sector shifts, overall, have produced a ratio of employee compensation to gross value added that has not changed much over time. Applying the 2014 compensation ratios to 1995 value-added weights yields an aggregate share of 52 percent, for example, not that different from the observed ratio of 54 percent in 1995.

4. Conclusions

In this article, we reviewed the broader international literature about labor's share, examined trends within Hungary while assessing issues of both data quality and mixed income, and analyzed the role of changes within and across sectors of the Hungarian economy. Our conclusions are:

(a) labor's share measured only using employees and not the self-employed has remained relatively constant over time;

(b) labor's share including the self-employed has indeed likely declined, but sufficient concern surrounds data quality and the self-employment imputation that the quantitative extent of any such decline is unclear;

(c) self-employment has declined markedly, both because of shifts across sectors and reductions in self-employment rates within each sector;

(d) labor's share in industry has declined noticeably;

(e) net capital income has risen as a share of national income; for gross capital income, the share excluding real estate has increased notably.

(f) The dependence of results on the self-employed is problematic because of the myriad ways of classifying their labor income, the changes in tax regimes over the period as well as the deficiencies in underlying data. Other aspects of the data including details of the sectoral movements and the capital imputation raise further questions.

At the same time, any decline in labor's share in Hungary is not that remarkable when looked at in the context of other countries during the same period. Poland's decline in manufacturing labor share was more rapid for instance. Hungary's level of labor share is neither the lowest among comparable countries nor has it declined the most rapidly, even under the potentially flawed ways in which the data are measured internationally.

Factor shares remain an important topic for analysis and policy, but care is warranted in interpreting the apparent shifts in Hungarian labor share. The sensitivity of the Hungarian results to self-employment assumptions is particularly noteworthy.

References

Benedek, D. – Lelkes, O. (2011): The Distributional Implications of Income Under-Reporting in Hungary. *Fiscal Studies,* Vol. 32, Issue 4, December 2011, pp. 539–560.

Bradsher, K. (1995): Productivity is All, But It Doesn't Pay Well. *New York Times*, June 25, 1995.

Bridgman, B. (2014): Is Labor's Loss Capital's Gain? Gross versus Net Labor Shares. *Bureau of Economic Analysis,* October 2014.

Cobb, C. – Douglas, P. H. (1928): A Theory of Production. *The American Economic Review*, Vol. 18, No. 1, pp. 139-165. Supplement, Papers and Proceedings of the Fortieth Annual Meeting of the American Economic Association.

Elsby, M. – Hobijn, B. – Sahin, A. (2013): The Decline of the U.S. Labor Share. *Brookings Papers on Economic Activity*, Vol. 47, Issue 2, Fall 2013, pp. 1-63.

The FHB Index. http://www.fhbindex.com. Downloaded on April 24, 2015.

Global Property Guide (2015): http://www.globalpropertyguide.com/Europe/Hungary/rent-yields. Downloaded on April 24, 2015.

Gollin, D. (2002): Getting Income Shares Right. *Journal of Political Economy*, Vol. 110, No. 2, pp. 458-474.

Guerriero, M. (2012): Labor Share of Income around the World: Evidence from a Panel Dataset. University of Manchester, *Institute for Development Policy and Management,* WP No. 32.

Hárs, Á. (2012): Atipikus foglalkoztatási formák Magyarországon a kilencvenes és kétezres években. *Budapest Working Papers on the Labour Market*, BWP 2012/7; Hungarian Academy of Sciences, Budapest Corvinus University.

Jaumotte, F. – Tytell, I. (2007): How Has the Globalization of Labor Affected the Labor Income Share in Advanced Countries? *IMF Working Paper*, WP/07/298, December 2007.

Kaldor, N. (1961): Capital Accumulation and Economic Growth. In: Lutz, F. A. – Hague, D.C. (Eds.): *The Theory of Capital,* St. Martins Press, pp. 177-222.

Karabarbounis, L. – Neiman, B. (2013): The Global Decline of the Labor Share. *University of Chicago Booth School of Business Working Paper*, October 2013.

OECD (2012): Labour Losing to Capital: What Explains the Declining Labour Share? *OECD Employment Outlook,* Chapter 3, pp. 109-161.

Piketty, T. (2014): *Capital in the Twenty-First Century.* Belknap Press, 696 p.

Rognlie, M. (2015): Deciphering the fall and rise in the net capital share. *Brookings Papers on Economic Activity*, Spring 2015.

Wikipedia (2015): List of Countries by home ownership rate. https://en.wikipedia.org/wiki/List_of_countries_by_home_ownership_rate. Downloaded on April 24, 2015.

Appendix

Table 1.
Shares of Total Employment by Year
(1995–2014)

Year	Agriculture, Forestry and Fishing	Industry (ex construction)	Construction	Trade, Travel & Food Service	Information and Communication	Financial Insurance	Professional, science, technology, and administration	Public Administration, education and social work	Art, Recreation & Other Services
1995	15%	26%	5%	22%	2%	2%	3%	21%	4%
1996	15%	25%	5%	22%	2%	2%	3%	20%	4%
1997	15%	26%	5%	22%	2%	2%	3%	20%	4%
1998	14%	27%	6%	22%	2%	2%	4%	20%	4%
1999	14%	26%	6%	22%	2%	2%	4%	20%	4%
2000	12%	26%	6%	23%	2%	2%	4%	20%	4%
2001	11%	26%	6%	23%	2%	2%	5%	19%	4%
2002	11%	26%	6%	23%	2%	2%	5%	20%	4%
2003	9%	25%	7%	23%	2%	2%	5%	21%	4%
2004	9%	24%	7%	23%	2%	2%	6%	21%	4%
2005	8%	24%	7%	24%	2%	2%	6%	21%	4%
2006	8%	24%	7%	24%	2%	2%	6%	21%	4%
2007	8%	23%	7%	24%	2%	2%	6%	21%	4%
2008	7%	24%	7%	24%	2%	2%	7%	20%	4%
2009	7%	23%	7%	24%	2%	2%	7%	21%	4%
2010	7%	23%	7%	24%	2%	2%	7%	22%	4%
2011	7%	23%	7%	24%	3%	2%	7%	21%	4%
2012	7%	22%	6%	25%	3%	2%	8%	21%	4%
2013	7%	21%	6%	24%	3%	2%	9%	22%	4%
2014	7%	21%	6%	24%	3%	2%	9%	23%	4%

Source: Statistical Office of European Communities, Haver Analytics

Table 2.
Self-Employment Rates by Sector
(1995–2014)

Year	Agriculture, Forestry and Fishing	Industry (ex construction)	Construction	Trade, Travel & Food Service	Information and Communication	Financial Insurance	Professional, science, technology, and administration	Public Administration, education and social work	Art, Recreation & Other Services
1995	61%	5%	17%	19%	4%	4%	14%	1%	27%
1996	63%	5%	18%	19%	5%	5%	18%	1%	28%
1997	64%	5%	19%	18%	5%	6%	18%	1%	27%
1998	64%	5%	19%	17%	6%	8%	19%	1%	26%
1999	65%	5%	20%	17%	6%	11%	17%	2%	28%
2000	66%	4%	20%	15%	5%	11%	15%	2%	26%
2001	64%	4%	20%	14%	5%	10%	15%	2%	28%
2002	64%	4%	19%	14%	8%	12%	16%	1%	25%
2003	61%	4%	18%	14%	8%	13%	17%	1%	26%
2004	61%	4%	18%	14%	7%	13%	15%	2%	27%
2005	60%	4%	16%	12%	10%	14%	13%	2%	25%
2006	60%	4%	16%	12%	8%	13%	12%	2%	23%
2007	58%	3%	17%	11%	7%	13%	11%	1%	24%
2008	58%	3%	15%	11%	7%	14%	13%	2%	22%
2009	57%	3%	15%	11%	7%	15%	11%	2%	26%
2010	57%	3%	16%	10%	7%	15%	9%	2%	24%
2011	56%	3%	17%	10%	7%	16%	8%	2%	24%
2012	58%	3%	16%	10%	6%	16%	7%	2%	24%
2013	59%	3%	12%	8%	6%	15%	9%	1%	20%
2014	59%	2%	12%	8%	7%	15%	8%	1%	20%

Source: Statistical Office of European Communities, Haver Analytics

Table 3.
Shares of Total Value Added by Sector
(1995–2014)

Year	Agriculture, Forestry and Fishing	Industry (ex construction)	Construction	Wholesale and retail trade, Transport, Accomodation & Food	Information and communication	Financial Insurance activities	Professional, scientific and tech activities	Public admin, education, social work	Arts, entertainment & recreation; other service activities	Real Estate
1995	8%	25%	5%	18%	3%	4%	6%	19%	4%	7%
1996	8%	25%	5%	17%	4%	5%	6%	18%	4%	8%
1997	7%	27%	5%	18%	4%	4%	6%	17%	3%	8%
1998	7%	28%	5%	18%	5%	4%	6%	17%	3%	8%
1999	6%	27%	5%	17%	5%	3%	7%	17%	3%	8%
2000	6%	27%	5%	18%	5%	4%	7%	17%	3%	9%
2001	6%	26%	5%	18%	5%	4%	7%	17%	3%	9%
2002	5%	25%	6%	18%	5%	4%	8%	18%	3%	8%
2003	5%	25%	5%	17%	5%	4%	8%	19%	3%	8%
2004	5%	26%	5%	17%	5%	4%	8%	19%	3%	8%
2005	4%	26%	5%	17%	5%	5%	8%	19%	3%	8%
2006	4%	26%	5%	18%	5%	5%	8%	18%	3%	8%
2007	4%	26%	5%	19%	5%	4%	8%	18%	3%	8%
2008	4%	25%	5%	19%	5%	4%	8%	18%	3%	8%
2009	4%	25%	5%	18%	6%	5%	9%	18%	3%	9%
2010	4%	26%	4%	18%	5%	5%	9%	18%	3%	9%
2011	5%	26%	4%	18%	5%	5%	9%	17%	3%	9%
2012	5%	27%	4%	18%	5%	4%	9%	17%	3%	9%
2013	4%	26%	4%	19%	5%	4%	9%	17%	3%	9%
2014	4%	26%	4%	18%	5%	4%	9%	18%	3%	8%

Source: Statistical Office of European Communities, Haver Analytics

Table 4.
Employee Compensation as Share of Gross Value Added by Sector
(1995-2014)

Year	Agriculture, Forestry and Fishing	Industry (ex construction)	Construction	Wholesale and retail trade, Transport, Accomodation & Food	Information and communication	Financial Insurance activities	Professional, scientific and tech activities	Public admin, education, social work	Arts, entertainment & recreation; other service activities	Real Estate
1995	28%	59%	55%	60%	45%	47%	50%	69%	57%	16%
1996	26%	58%	55%	62%	39%	41%	49%	68%	59%	16%
1997	29%	53%	47%	61%	40%	52%	49%	69%	56%	15%
1998	28%	50%	49%	60%	36%	52%	52%	70%	61%	17%
1999	28%	50%	44%	60%	34%	60%	47%	70%	54%	14%
2000	29%	53%	46%	62%	41%	51%	49%	71%	54%	15%
2001	29%	52%	44%	60%	48%	50%	47%	73%	53%	14%
2002	31%	52%	41%	59%	43%	48%	44%	76%	57%	13%
2003	30%	50%	45%	63%	42%	46%	49%	78%	60%	12%
2004	25%	49%	47%	66%	41%	46%	52%	78%	64%	12%
2005	28%	48%	48%	65%	43%	44%	55%	78%	61%	12%
2006	28%	46%	52%	63%	42%	46%	52%	78%	62%	12%
2007	29%	48%	54%	63%	44%	54%	57%	77%	62%	13%
2008	29%	49%	51%	63%	43%	57%	55%	76%	58%	13%
2009	33%	48%	52%	67%	44%	51%	56%	74%	60%	12%
2010	32%	46%	55%	66%	45%	51%	58%	73%	59%	12%
2011	26%	47%	56%	65%	46%	48%	58%	72%	60%	12%
2012	29%	47%	59%	66%	47%	52%	60%	71%	60%	11%
2013	30%	47%	54%	62%	48%	57%	58%	72%	58%	10%
2014	29%	46%	48%	61%	53%	55%	60%	73%	56%	11%

Source: Statistical Office of European Communities, Haver Analytics