

## **Taking Competition Policy Seriously: Macro Indicators for Regulators**

Assessing Labor Market Outcomes

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This excerpt to a forthcoming paper is being submitted as a comment to “Hearings on Competition and Consumer Protection in the 21st Century.”

Summary:

The lack of real wage growth has raised the suspicion that corporations are using their market power to artificially hold down employment, pay, and labor share. In particular, the tech/telecom/ecommerce (TTE) sector has received sustained criticism for its “bigness”.

However, we find that the TTE sector has generated significantly faster hours growth and bigger real pay increases since 2007 than the rest of the private sector. We also find that labor share in the TTE sector has risen significantly since 2007, while falling in the rest of the private sector.

These results are consistent with strong competition in the labor markets associated with TTE industries. Competition regulators concerned with labor market monopsony should be looking outside the TTE sector, at industries where employment and real wage growth are weak and the labor share is falling.

## Taking Competition Policy Seriously: Assessing Labor Market Outcomes

Why aren't workers getting paid more? And can competition policy help?

Certainly one of the great recent macroeconomic and political puzzles has been the continued stagnation of real wages. In the year ending July 2018, real average hourly earnings decreased 0.2 percent, despite an unemployment rate under 4%.

The lack of wage growth has raised the suspicion that corporations are using their size and market power to artificially hold down pay. Thus, an April 2018 Vox opinion piece had the headline “More and more companies have monopoly power over workers’ wages” with the subtitle “The trend can explain slow growth, “missing” workers, and stagnant salaries.”<sup>1</sup>

The link between concentration and slow wage growth has received some empirical support. Azar, Marinescu, and Steinbaum find that, a 10% increase in concentration in local labor markets is associated with a 0.3% to 1.3% decrease in posted wages.<sup>2</sup> Autor and al argue that the fall in the labor share is related to the rise of superstar firms.<sup>3</sup> In a 2018 paper, Benmelech, Bergman, and Kim find that the link between

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<sup>1</sup> Suresh Naidu, Eric Posner, and Glen Weyl. “More and more companies have monopoly power over workers’ wages.” Vox, Apr 6, 2018  
<https://www.vox.com/the-big-idea/2018/4/6/17204808/wages-employers-workers-monopsony-growth-stagnation-inequality>

<sup>2</sup> Azar, José, Ioana Marinescu, and Marshall I. Steinbaum. 2017. “Labor Market Concentration.” Working Paper 24147. National Bureau of Economic Research.

<sup>3</sup> David Autor, David Dorn, Lawrence F. Katz, Christina Patterson, and John Van Reenen. 2017. “The Fall of the Labor Share and the Rise of Superstar Firms.” Massachusetts Institute of Technology, Working Paper, May 2017.

productivity growth and wage growth is stronger when labor markets are less concentrated.<sup>4</sup>

From this perspective, some economists and legal scholars argue that competition policy should more explicitly take labor markets into account. For example, Marinescu ties low wages directly to weak merger enforcement:

“...labor market concentration can worsen after the merger of firms that compete for the same pool of workers, regardless of whether they compete in the same product market.”

...some mergers may be unlawful because they injure competition in the labor market by enabling a post-merger firm to suppress wages or salaries anticompetitively. Such anticompetitive wage suppression goes hand in hand with the suppression of employment and output below the competitive level. The economic ripple effects can be staggering, and we are only just beginning to understand them.<sup>5</sup>

Krueger and Posner argue that additional measures are needed to protect low-wage workers, including a ban on noncompete covenants that bind low-wage workers and a ban on no-poaching arrangements among establishments that belong to a single franchise company.<sup>6</sup>

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<sup>4</sup> Benmelech, Efraim, Nittai Bergman, and Hyunseob Kim. 2018. “Strong Employers and Weak Employees: How Does Employer Concentration Affect Wages?” Working paper, January 2018

<sup>5</sup> Ioana Marinescu, “The Other Side of a Merger: Labor Market Power, Wage Suppression, and Finding Recourse in Antitrust Law,” Penn Wharton Public Policy Initiative March 2018

<sup>6</sup> Krueger, Alan, and Eric Posner. 2018. “A Proposal for Protecting Low-Income Workers from Monopsony and Collusion.” The Hamilton Project, February 2018.

In a recent report, the left-leaning Economic Policy Institute examines the empirical evidence, and concludes that labor market concentration is indeed negatively correlated with wages, but its impact is limited.<sup>7</sup>

These estimates suggest that concentration has not risen enough, nor is its effect on labor's share of income strong enough, to account by itself for an economically important share of the divergence between economy-wide productivity and the typical worker's pay in recent decades

### An Application of Labor Market Indicators to the Tech/Telecom/Ecommerce Sector

Is there direct evidence of the impact of concentration on labor market outcomes? It's logical to look at the tech/telecom/ecommerce sector, which has received sustained criticism for its "bigness". We look at three indicators: Employment growth, real wage growth, and changes in labor share.

#### *Employment*

Employment growth, or lack thereof, is one important indicator of labor market monopsony, because the classic exercise of labor market power involves employers paying lower wages and hiring fewer workers.

Tech companies such as Facebook and Google got a reputation for producing high stock market value without hiring many workers. When Facebook purchased Instagram in 2012 for \$1 billion, the startup had only 13 fulltime employees.

But in recent years, the tech/telecom/ecommerce companies have been hiring at a rapid rate. In 2016, Amazon became the fastest American company to reach

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<sup>7</sup> Josh Bivens, Lawrence Mishel, and John Schmitt. "It's not just monopoly and monopsony: How market power has affected American wages," Economic Policy Institute, April 2018.

300,000 workers, hitting that mark in its 20th year as a public company. In 2017, the ten largest US-based tech/telecom/ecommerce companies by market cap employed 1.6 million workers, based on their financial reports as of March 2018. That's up 82% from ten years earlier.<sup>8</sup>

By contrast, the ten largest industrial companies in 1979, measured by market cap, employed 2.2 million workers (1979 was the peak year for manufacturing employment in the US). Employment at these industrial companies rose 23% over the previous ten years.<sup>9</sup>

Looking at Figure 1, employment in the tech/telecom/ecommerce sector has outpaced the rest of the private sector since 2007. From 2007-2017, hours worked in the tech/telecom/ecommerce sector rose by 16.9%, compared to 6.9% in the rest of the private sector. Figure 2 shows that the job gap between the tech/telecom/ecommerce sector and the rest of the private sector has widened over time, with job gains in ecommerce, software, and Internet companies outweighing job losses in telecom and hardware.

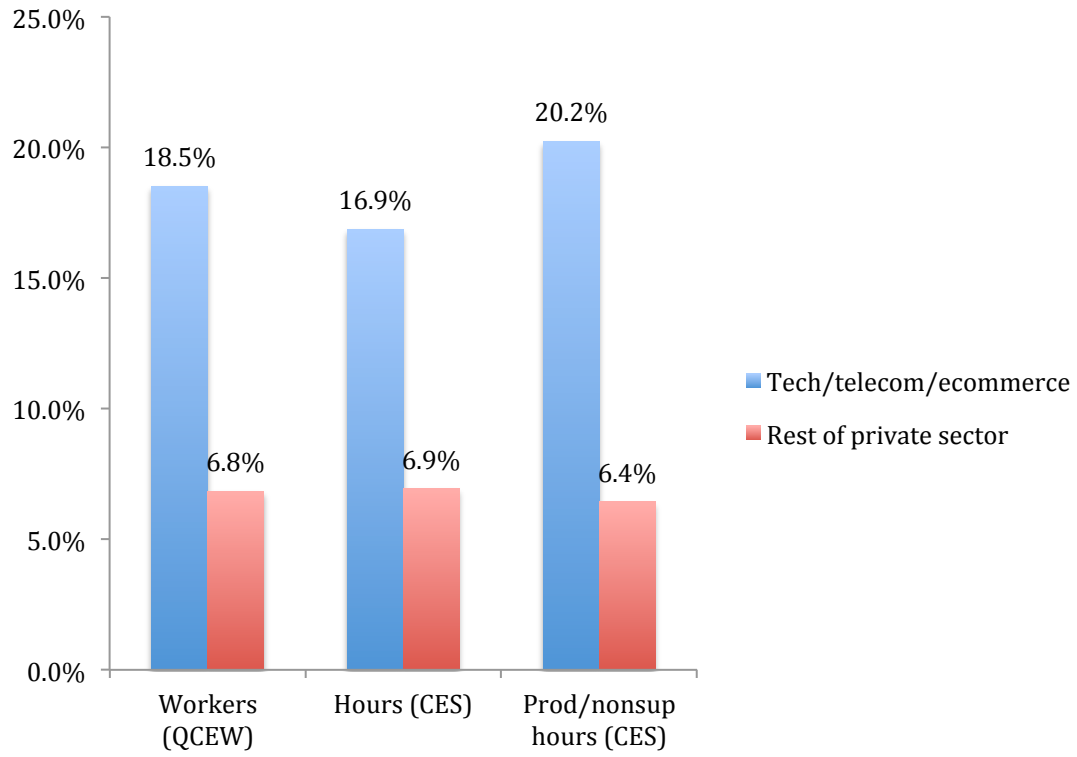
We can conclude from this analysis that there is no *prima facie* evidence for the proposition that tech/telecom/ecommerce companies are using monopsony power to suppress employment growth.

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<sup>8</sup> <http://www.progressivepolicy.org/blog/tech-telecom-employment-2017/>

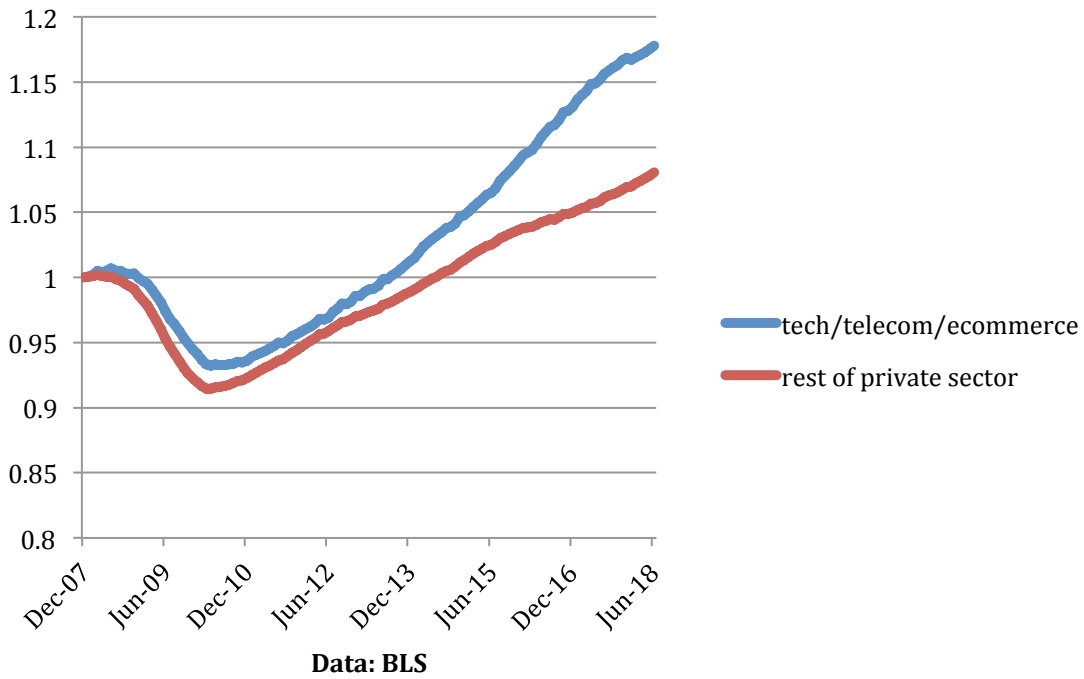
<sup>9</sup>Michael Mandel, "An Analysis of Job and Wage Growth in the Tech/Telecom Sector," Progressive Policy Institute, September 2017.

**Figure 1 Labor Market Indicators: Job Growth  
(percentage change, 2007-2017)**



Data: BLS

**Figure 2 Labor Market Indicators:  
Hours  
(Dec07 =1, 12-month moving average)**



### *Real pay growth*

An important indicator for labor market monopsony is obviously the growth of real worker pay. Companies with labor market power can hold down wages either by suppressing employment, or by using other mechanisms such as non-compete clauses.

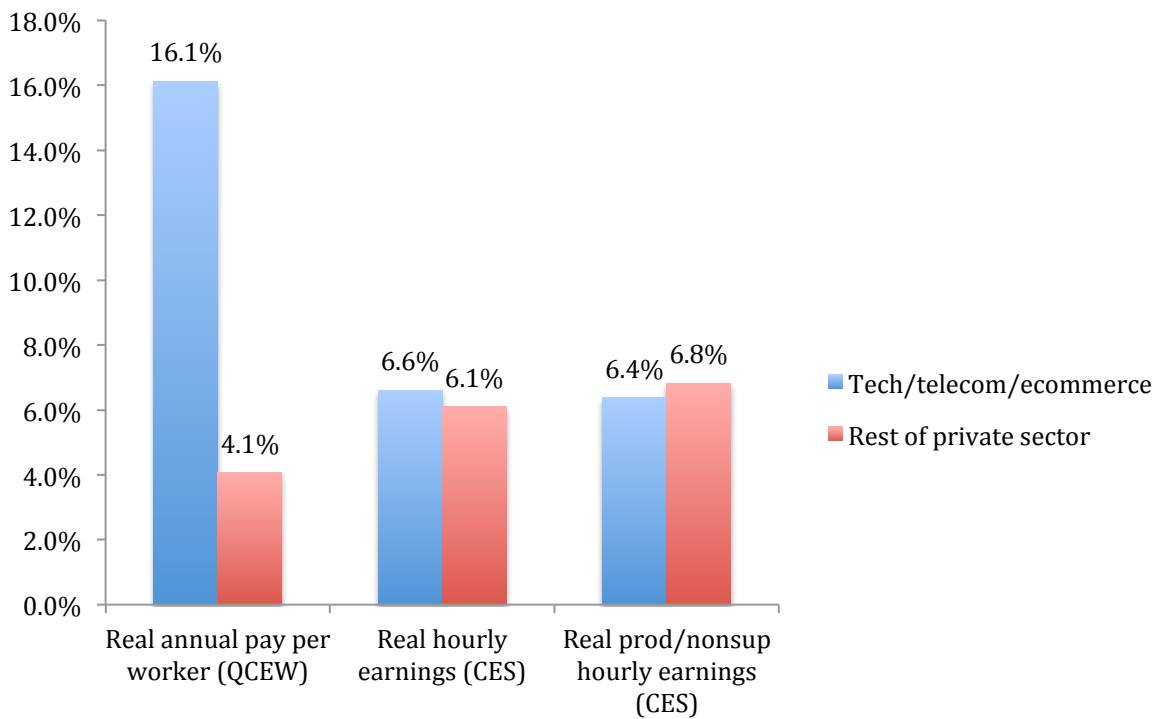
It's important to note that on an industry basis, real wage growth is not necessarily directly correlated with productivity growth. Indeed, in an economy with perfect competition in both the product and labor markets, industries with high productivity growth pay the same wages as industries with slow productivity growth. Moreover, real wage growth may be affected by changes in the skills mix of the workforce of that industry.

Keeping those caveats in mind, it is instructive to look at real pay growth in the tech/telecom/ecommerce sector versus the rest of the private sector. Figure 3 shows that real hourly earnings in the TTE sector are growing roughly at the same rate as the rest of the private sector. That's an interesting and perhaps surprising result, since pessimists would have expected TTE firms to be suppressing wage growth while optimists would have expected real wages in the TTE sector to be rising faster.

However, these figures for real earnings, collected by the BLS through the CES program, specifically do not include "awards or bonuses not paid each pay period" such as end-of-year bonuses and stock options. By contrast, the QCEW program covers total compensation paid, including bonuses and stock options. Using that broader definition, the data shows that real pay per worker in the TTE sector rose by 16.1% between 2007 and 2017, compared to only 4.1% in the rest of the private sector.



**Figure 3 Labor Market Indicators: Real Pay (percentage change 2007-2017)**



**Real annual pay includes end of year bonuses and a portion of exercised stock options Data: BLS**

For the TTE sector to produce a 16.1% rise in real pay over ten years, including a deep recession, is decent but not great. In part there has been a change in the composition of the TTE workforce, where ecommerce firms have hired large numbers of workers with high school diplomas for fulfillment centers. But the pattern of the data does not support the idea that TTE firms are artificially suppressing wage growth.

So far we have been looking on the national level. But the literature on labor market monopsony emphasizes that labor market competition is a local phenomenon. Addressing this point, Mandel finds that workers at ecommerce fulfillment center workers get paid 30% more than workers brick-and-mortar retail in the same country.<sup>10</sup> In other words, the shift from brick-and-mortar retail to ecommerce could be having the effect of raising wages.

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<sup>10</sup> Michael Mandel, “How Ecommerce Creates Jobs and Reduces Income Inequality,” Progressive Policy Institute, September 2017.

### *Labor Share*

The final important indicator is labor share. Autor and al argue that concentration leads to a fall in the labor share, and provides a plausible mechanism connected to “superstar firms.”<sup>11</sup> Following that, the implication is that the superstar firms in the tech/telecom/ecommerce sector are a key reason why the labor share continues to fall.

However, it turns out that the labor share in the tech/telecom/ecommerce sector has actually risen since 2007, once we calculate it. Meanwhile the labor share in the rest of the private sector has fallen since 2007.

In March 2018, the Bureau of Economic Analysis (BEA) released a working paper called “Defining and Measuring the Digital Economy.”<sup>12</sup> The working paper presented BEA’s initial work “to lay the foundation for a digital economy satellite account.”

The BEA authors focus on outlining their definition of the digital economy, and calculating its real growth and share of GDP. However, their data allows us to calculate two other policy-relevant measures of the digital economy: Labor share and gross margin.

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<sup>11</sup> David Autor, David Dorn, Lawrence F. Katz, Christina Patterson and John Van Reenen, 2017. “Concentrating on the Fall of the Labor Share,” *American Economic Review*, American Economic Association, vol. 107(5), pages 180-185, May.

<sup>12</sup> Kevin Barefoot, Dave Curtis, William Jolliff, Jessica R. Nicholson, Robert Omohundro. “Defining and Measuring the Digital Economy,” March 2018. [https://www.bea.gov/digital-economy/\\_pdf/defining-and-measuring-the-digital-economy.pdf](https://www.bea.gov/digital-economy/_pdf/defining-and-measuring-the-digital-economy.pdf)

Labor share is a measure of how much of the income of an industry is going to workers. For the purposes of this paper, we define the labor share as compensation (COMP) divided by value-added (VA), expressed as a percentage.<sup>13</sup>

Gross margin is a measure of the profitability of an industry per unit of sales. In the business literature, gross margin is a company's total sales revenue minus its cost of goods sold, divided by total sales revenue, expressed as a percentage.<sup>14</sup>

For our purposes, we define gross margin as an industry's total gross output (GO), minus the cost of intermediate inputs (II) and labor compensation (COMP), divided by total gross output, expressed as a percentage.<sup>15</sup>

Based on this definition, labor share in the private sector has trended down since at least 1990 (Table 1). Similarly, private sector gross margin have trended up since at least 1990. Since 2007, private sector labor share has fallen by 0.8 percentage points, and private sector gross margin has risen by 1.9 percentage points.<sup>16</sup>

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<sup>13</sup> Several alternative measures of the labor share all have the same general trend.

<sup>14</sup> <https://www.investopedia.com/terms/g/grossmargin.asp#ixzz5No688Apd>

<sup>15</sup> The numerator includes profit-type income, such as profits, rents, and interest. It also includes taxes on production and imports that are chargeable to business expenses, such as state and local sales and property taxes, and a hodgepodge of state, local, and federal excise taxes.

<sup>16</sup> Data in Table 1 and Table 2 is prior to the July 2018 benchmark revision. We focus only on private industries.

**Table 1: Private Sector: Falling Labor Share, Rising Gross Margin**

	1990	2007	2016
<b>Labor Share</b>	52.2%	50.6%	49.8%
<b>Gross Margin</b>	26.0%	26.7%	28.6%

Data: BEA (as of April 2018)

**Table 2: Digital Sector: Rising Labor Share, Falling Gross Margin**

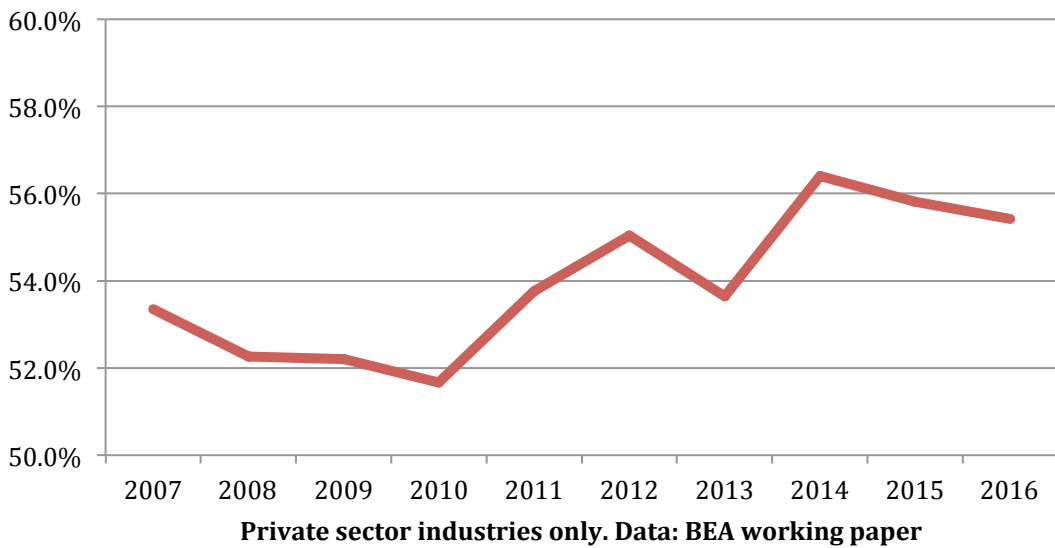
	2007	2016
<b>Labor Share</b>	53.4%	55.4%
<b>Gross Margin</b>	28.4%	27.2%

Private sector industries only. Data: BEA working paper

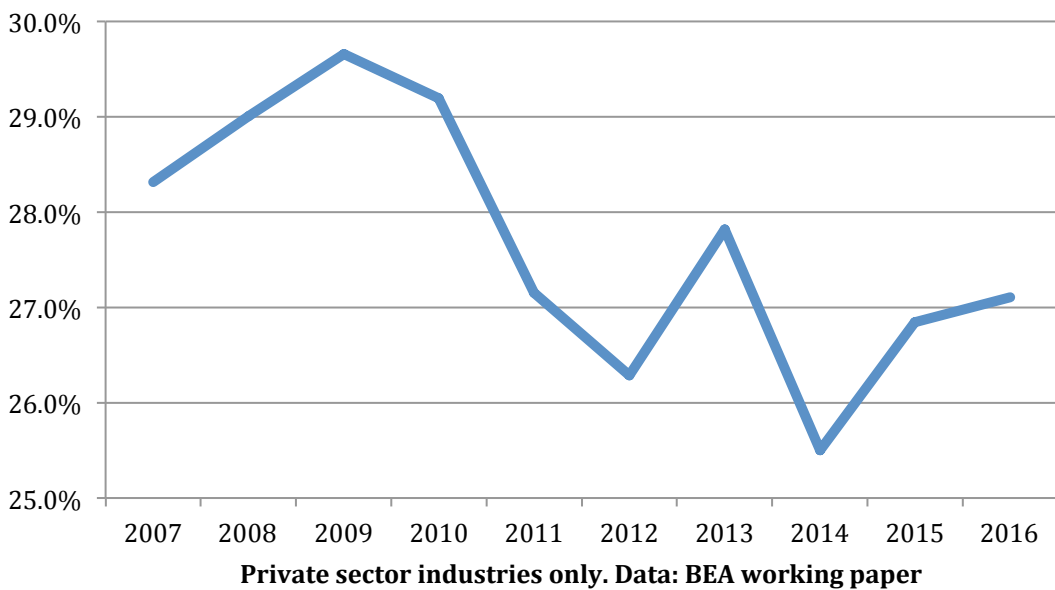
The digital economy data from the BEA allows us to calculate the labor share and gross margin for the digital sector of the economy (Table 2). We see that labor share for private industries in the digital sector rose by 2 percentage points in the post-2007 “tech boom” period. Gross margin fell by 1.2 percentage points.

Figures 4 and 5 on the next page show the change in the labor share over time. Please note that this data was released prior to the July 2018 benchmark revision.

**Figure 4 Digital Economy: Rising Labor Share**



**Figure 5 Digital Economy: Falling Gross Margin**



## Conclusion

These results suggest that benefits of productivity growth in the TTE or digital sector since 2007 are being shared with workers and customers. This is consistent with strong competition in the product and labor markets. By contrast, companies in the broader private sector are benefitting from lower labor share and higher gross margin, which suggest that market power is rising outside of the digital sector.

To the degree that we would want to apply competition policy to deal with labor market issues, this suggests competition regulators should be looking at industries where employment and real wage growth are both weak, and the labor share is falling.