



Education and Economic Development: Impact of Teachers, Protests, and Policy Reform

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UNESCO: World Teacher's Day, October 5 since 1994

- ▶ **“The right to education means the right to a qualified teacher.”**
- ▶ **Teachers are the “key to the achievement of the Education 2030 agenda.”**




UNESCO Workshop, Almaty, 2018: Teachers

Education Quality in Central Asia

“...current education is not able to prepare the young generation to solve the problems of the 21st century.”
(Shepherd Urenje, SWEDESD)

“Sustainability begins with teachers in Central Asia.”
(UNESCO)



Education as a Tool for Development: An Overview

- ▶ **Human Capital** (education, health, mobility):
 - ▶ Inputs into **production** of development outcomes
- ▶ High Rate of Return (ROR) on Investment in education
 - ▶ 2014 study: 10% average private return, all countries
 - ▶ Higher for girls
 - ▶ Social ROR < Private ROR

Private Wage Benefits to Education in Kyrgyz Republic, Relative to Secondary Education

	2010 Men	2013 Men	2010 Women	2013 Women
Basic (0-8)	-18%	0	0	0
College, STEM	18%	17%	24%	31%
College, ECONOMICS	33%	15%	39%	33%



How to Produce Quality Education

- **Education production function**
- **Output (Y) = Education** (years, levels, type)
- **Inputs** into Y: classrooms, supplies, technology, **teachers**
- **Teachers**: most important input into Y (positive impact)
 - **Quality of teaching matters**




Importance of Teacher Quality

- ▶ **Chetty, Friedman and Rockoff, 2014, *American Economic Review***
- ▶ How teacher quality affects children in long run (20 years)
- ▶ One large urban school district in the US
- ▶ Long run outcomes:
 - ▶ **Education (college, quality of school), Adult Earnings, Neighborhood Quality, Teenage fertility**



Major Policy Result

- **Ineffective teacher:** bottom 5% of the distribution of quality
- **Policy:** replace ineffective teacher with an average teacher
 - **+\$14,500 in lifetime earnings per child: powerful impact**
 - **Good teaching: strong and important for long run private and social development of children**



Teacher Quality in Lower Income Countries (LICs)?

- No studies with this kind of data
- But, 2 descriptive studies on teacher quality in LICs
- Bold et al., 2017, *Journal of Economic Perspectives: Africa*
- Chaudhury et al., 2006, *Journal of Economic Perspectives: India, Indonesia, Uganda, Ecuador, Peru, and Bangladesh*



Teacher Quality in LICs

- **Poor teaching:** “...dramatic loss in human capital of students we observe after four years of school...”: Africa
- Characteristics of low quality teaching:
 - **Teacher absence** from school or classroom
 - Teachers not prepared; **low quality teacher training**
 - **Lack of accountability.** Poor performance, no penalty.
 - **Teacher selection:** best students choose other occupations



Policies that Affect Teacher Quality

- ▶ **Teacher salaries:**

- ▶ Based on level of education (degrees) and experience
- ▶ No reward for good performance
- ▶ Low base pay (Kyrgyz Republic), or pay is too high but accountability is weak (India)
- ▶ Gender gap in pay: most teachers are women.

- ▶ **Inequality** in infrastructure: poor and rich, rural and urban districts

- ▶ Less incentive for teachers to be present and productive if infrastructure is poor.



International Protests by Teachers, 2018

- USA: teacher strikes in West Virginia, Oklahoma, Arizona
- Europe: strikes in Scotland (school teachers); UK (colleges)
- Africa: Tunisia and Algeria
- Latin America: teacher strikes in Argentina, Uruguay, Mexico (4 states), Brazil, Venezuela



Protests in Asia

- ▶ China, 2014-15: central China; then Northeast, Southeast, and Southwest provinces
- ▶ **Kyrgyz Republic, December 2010**
 - ▶ Districts in Osh and Jalalabad
 - ▶ Joined by teachers in Talas and Issuk-kul
 - ▶ Nationwide protests
- ▶ Common issues in these strikes: **low pay**, poor working conditions, inadequate support for education by the government



Compare Two States: West Virginia, USA and Kyrgyz Republic

- ▶ West Virginia, USA:
 - ▶ Ranks 48 in GDP per capita (\$40,071): very poor, mountainous state; mining is important
 - ▶ Lowest average teacher salary in US in 2016:
\$47,337 (WV); \$58,479 (US)
 - ▶ Ranks 46 on starting teacher salary: recruiting problem



More on West Virginia

- ▶ Students have more problems and are more expensive to educate than US average.
 - ▶ Poverty
 - ▶ Poor health and healthcare
 - ▶ Relatively low parent education
 - ▶ Rural/urban disparities: many remote, mountain communities with low quality schools



Kyrgyz Republic

- Lower middle income country: mountainous, mining
- Per capita GDP: 40,450 soms (\$880 per year) in 2010
- Average salary: **5906 soms per month in 2010**, on average (\$127)
- Teacher salary: **4069 soms per month in 2010**, on average (\$88)
- Teacher/average salary: **69%**

- Similar challenges for teachers as in WV
 - Poverty, poor healthcare, rural/urban gap

Teachers on Strike in WV and KR: Common Problems, Common Goals





Policy Reform for Teachers: West Virginia

- Union protested:
 - Proposed low increase in teacher salaries: 2019 (2%), 2020 and 2021 (1%)
 - No compensation for higher health care costs paid by public employees (including teachers)
- Strike ended with:
 - **5% increase in annual salary for teachers** and
 - **PROMISE** to address the health care cost concern



Policy Reforms: Kyrgyz Republic

- ▶ **Increase of 50.5% in average monthly salary in 2011**
 - ▶ 80% increase in salary for primary school teachers;
 - ▶ 50% increase for secondary school teachers
- ▶ Reduction in minimum hours of work to 6-8 per week:
more teachers can work part-time
- ▶ **Additional payments if:**
 - ▶ Teach in rural or high altitude area



Impact of West Virginia Policy

- Teachers went back to work; no additional strikes this year.
- Long run:
 - Unknown
 - Promises from the Governor over health care costs
- Recruitment? Teacher quality? Student outcomes?



Impact of Kyrgyz Republic Policy

- Research by **Nurbek Jenish**, first year after policy changed
 - Increase in hours of work in urban, not rural, areas, female teachers: **+5 hours/week**
 - Increase in hours of work reduced teacher shortage by **14.5% in urban areas**
- Research by **Damir Esenaliev and me**: in progress
 - Life in Kyrgyzstan (LIK) data from 2010-2016
 - Kyrgyzstan Integrated Household Surveys (KIHS) data from 2009-2015




Anderson and Esenaliev: Preliminary Analysis, LIK data

- ▶ Sample selection
 - ▶ Ages 23-65
 - ▶ Not self-employed
 - ▶ Reports monthly wage ≥ 100 and $\leq 1,000,000$ soms
- ▶ Sample size: 9342 persons, 2010-2016
 - ▶ 1836 teachers, health care workers, social workers
 - ▶ 7506 other workers



Graphs: Policy and Wages, LIK Data

- ▶ 2010: last year before the policy reform
 - ▶ “Teachers” group = teachers, health care workers, and social workers (reform affected all 3 occupations)
 - ▶ Look at outcomes after reform: 2011-2016
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Compare “Teachers” and Other Employees: 2010-2016

	“Teachers”	Other Employees
% Female	77.5	40.6
% Rural	56.6	44.2
% Kyrgyz	80.3	63.8
% Part-time	46.3	15.9
Hours per week	35.4	43.2
Years on this job	13.2	7.2
Years of education	13.8	11.8
Sample size	1836	7506

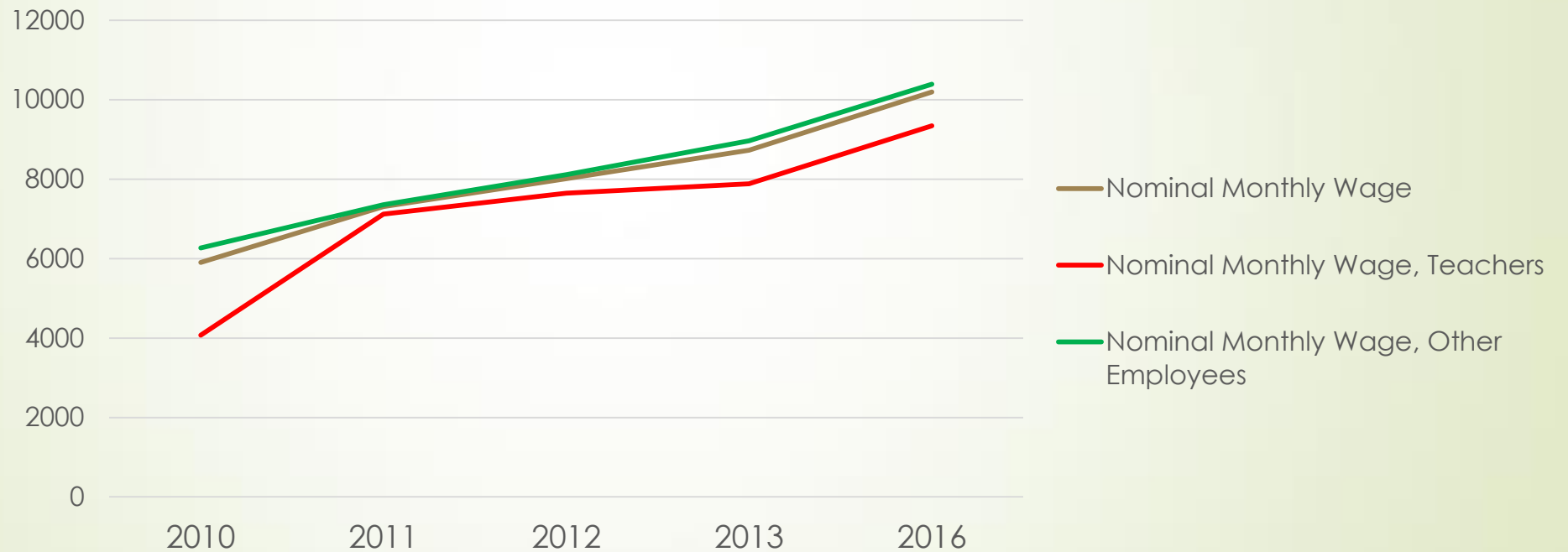


Comparisons: “Teachers” and Other Employees

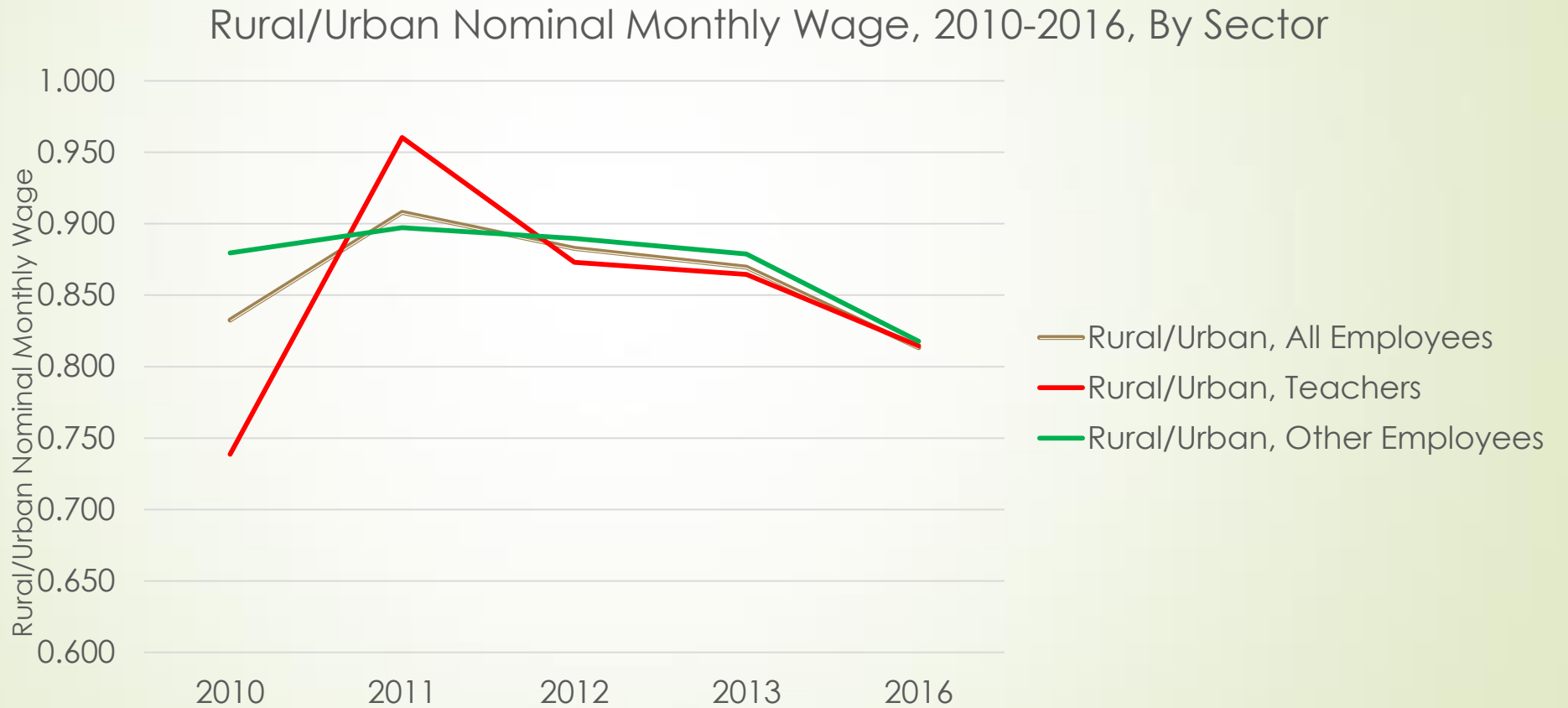
- Nominal monthly wages
- Nominal hourly wages
- Labor supply
 - Hours of work per week
 - Probability of holding a teacher, health or social worker job
- Gender comparisons

Nominal Monthly Wages: Early Increase

Nominal Monthly Wage, Teachers and Other Employees,
2010-2016

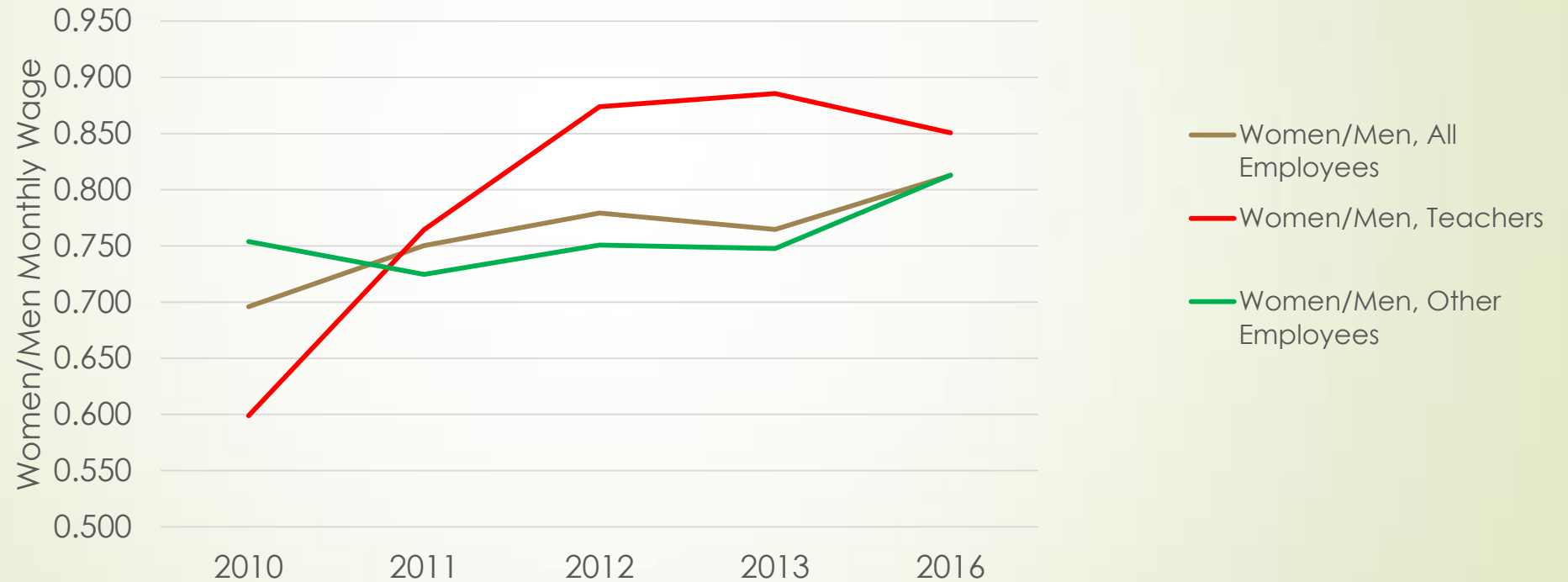


Rural/Urban Monthly Wages: Reduce Gap for 1 Year



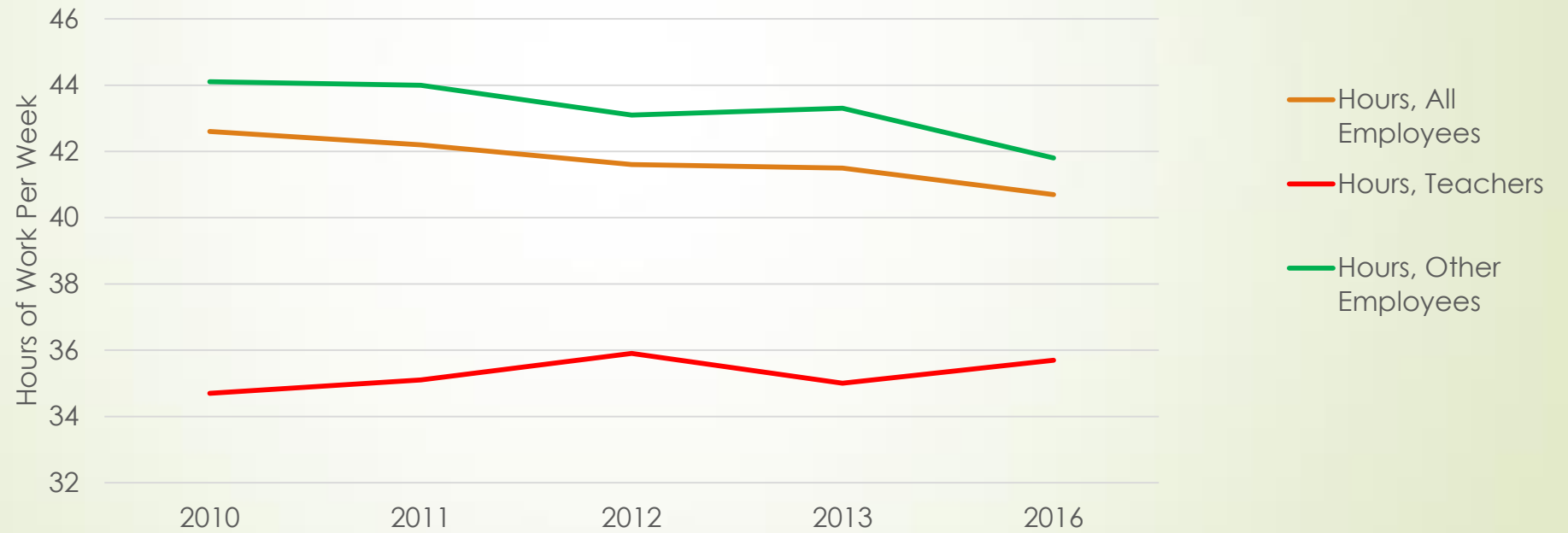
Female/Male Nominal Monthly Wages: Reduce the Gap

Women/Men Nominal Monthly Wage, Teachers and Other Employees,
2010-2016

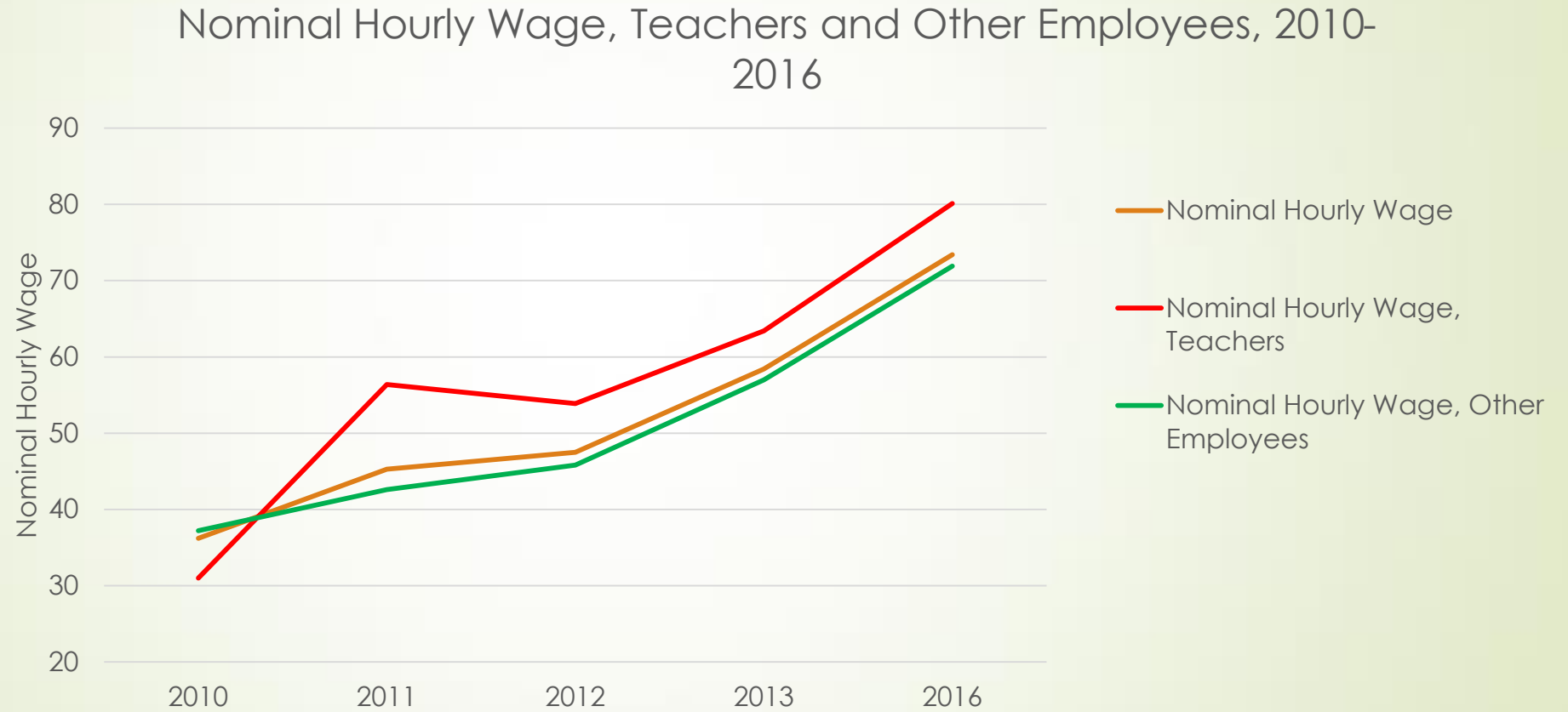


Hours of Work: More Hours

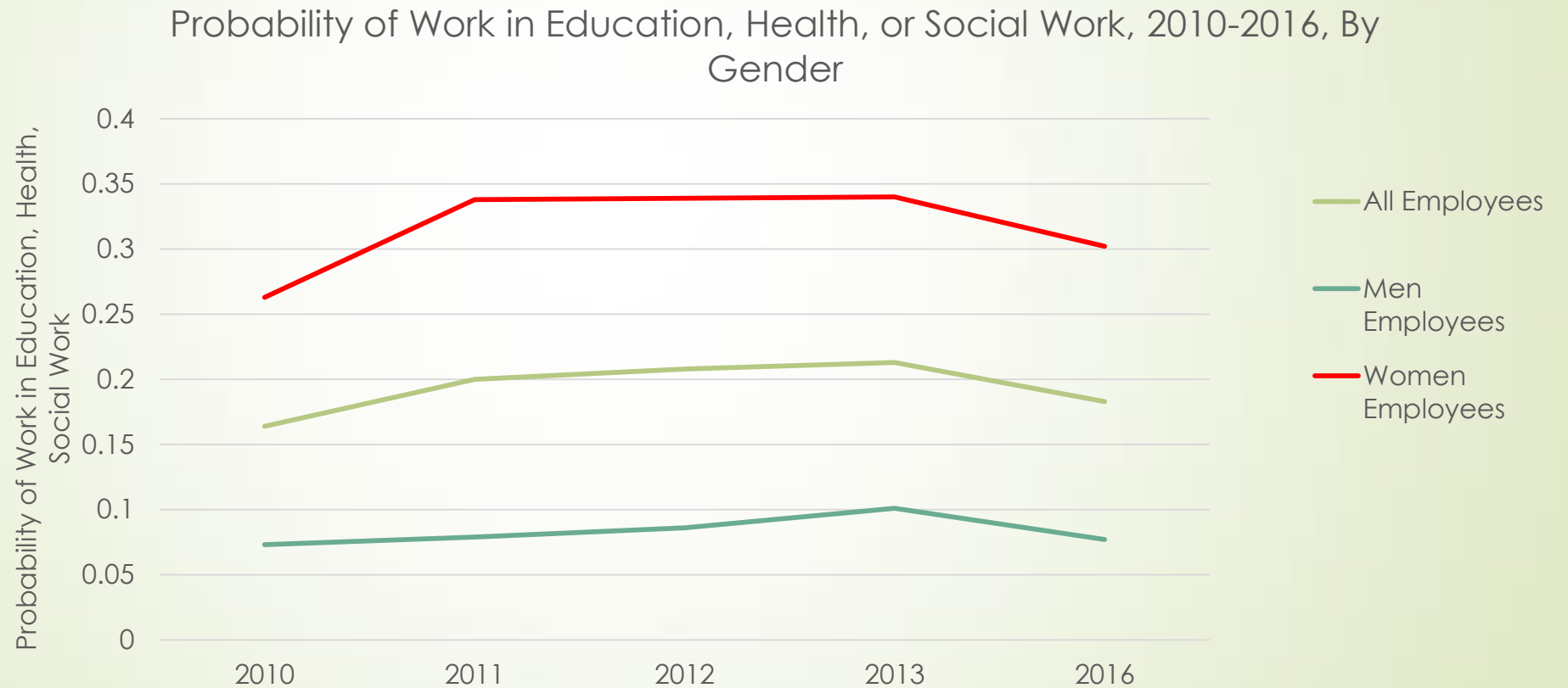
Hours of Work Per Week, 2010-2016, Teachers and Other Employees



Nominal Hourly Wage: Increase

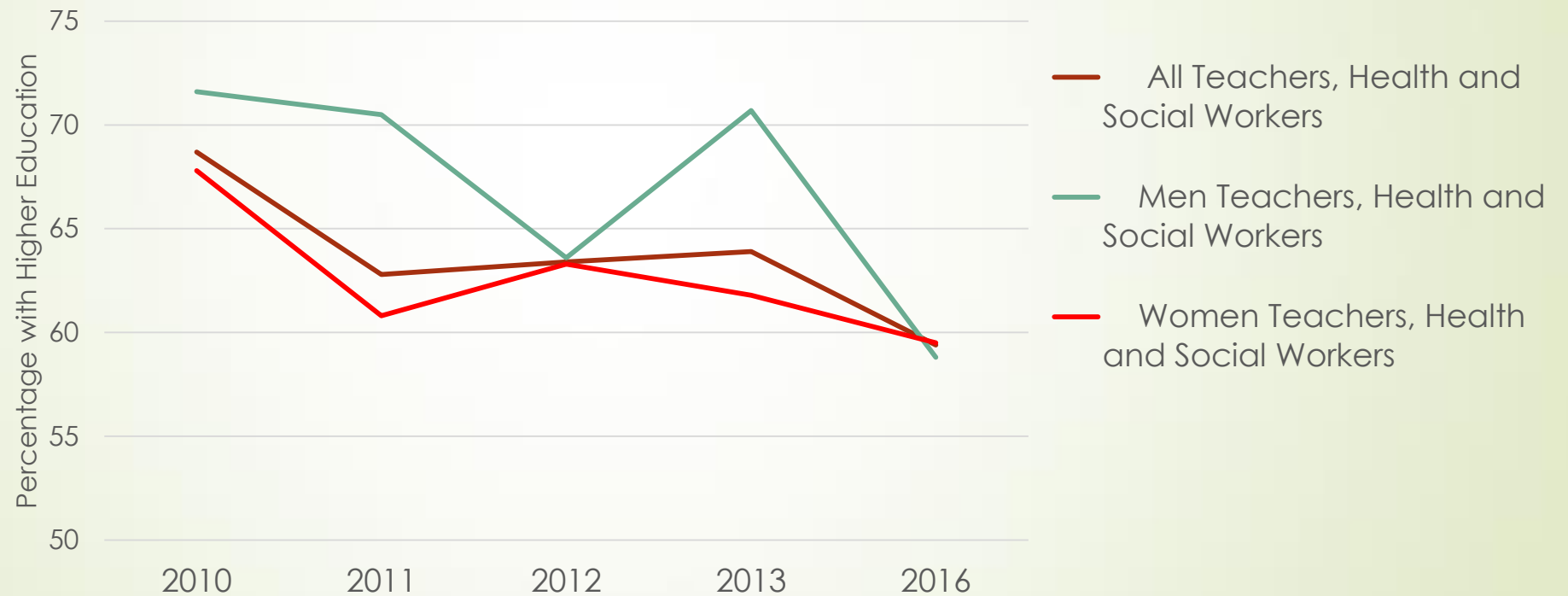


Employment as a Teacher, Health Care or Social Worker: Increase, Women




Quality of Teaching? Education of Teachers

Percentage of Teachers, Health and Social Workers with Higher Education, 2010-2016, By Gender





Conclusion 1

- Teachers and health care and social workers provide important social benefits to every country.
 - In many countries such as the Kyrgyz Republic and in some US states, teachers are not rewarded for the social value they provide.
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Conclusion 2

- ▶ **Low salary can lead to:**

- ▶ **Labor shortages:** teacher absence, large classes, contract or part-time teachers
- ▶ **Worker selection:** the best and brightest students often choose other occupations.
- ▶ **Corruption:** can boost wages to a market clearing level
- ▶ **Hardship** for those who remain in these jobs: multiple jobs



Conclusion 3

- ▶ **Teacher protests** throughout the world: evidence from 2010 (Kyrgyz Republic) through 2018 (US, Europe, Latin America, Africa)
- ▶ **Some policy reforms**
 - ▶ **US states:** higher salaries, some improvement in benefits
 - ▶ **Kyrgyz Republic:** higher salaries, but inconsistent policy over time
 - ▶ **Kazakhstan:** similar reform, civil servants, 2016



Conclusion 4

➤ **Impact of reforms**

- Teachers are back to work
- Teachers are better off
- Short run effects in the Kyrgyz Republic: higher monthly and hourly wages, higher labor supply; teacher, health care worker shortage is reduced
- No evidence on change in teacher quality
- Effect on students: still unknown



Conclusion 5

- Success story: **Singapore**
- Singapore's Policy Goal: "developing creative, innovative and lifelong learners"
- **PISA test**, 15 year olds, reading, math, science, 2015
 - Number one in all three areas
 - Strong motivation among students to learn science



Conclusion 6

➤ **How do they do it?**

- Well trained teachers: high quality pedagogical institution
 - Master teachers mentor new teachers for several years
 - Salary is competitive: negotiation
 - Performance reviews: bonuses
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- Centralized system but close collaboration with schools; school level flexibility



Conclusion 7

- ▶ Short run costs: training, mentoring teachers; compensation
- ▶ Long and short run benefits
 - ▶ Low teacher and student absenteeism and turnover
 - ▶ Less inequality in education services: safe schools
 - ▶ Students want to learn!
 - ▶ Highly productive workforce. Prepared for new jobs in the 21st century.
- ▶ Can this model work in Central Asia? Maybe.