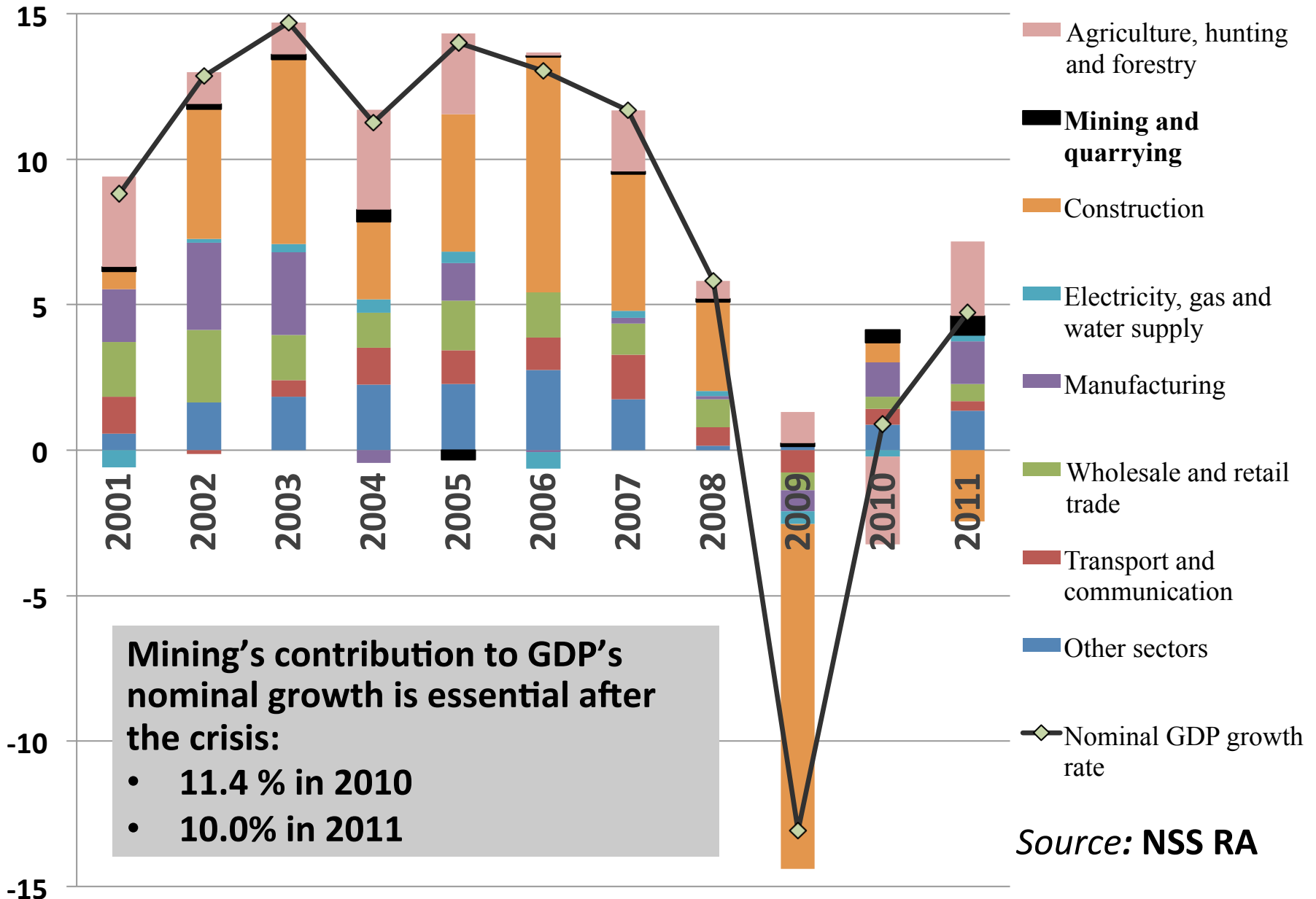


Impact of Mining on GDP Growth, Income Inequality, and Poverty: Evidence from Armenia

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Mining and GDP Growth: National Data



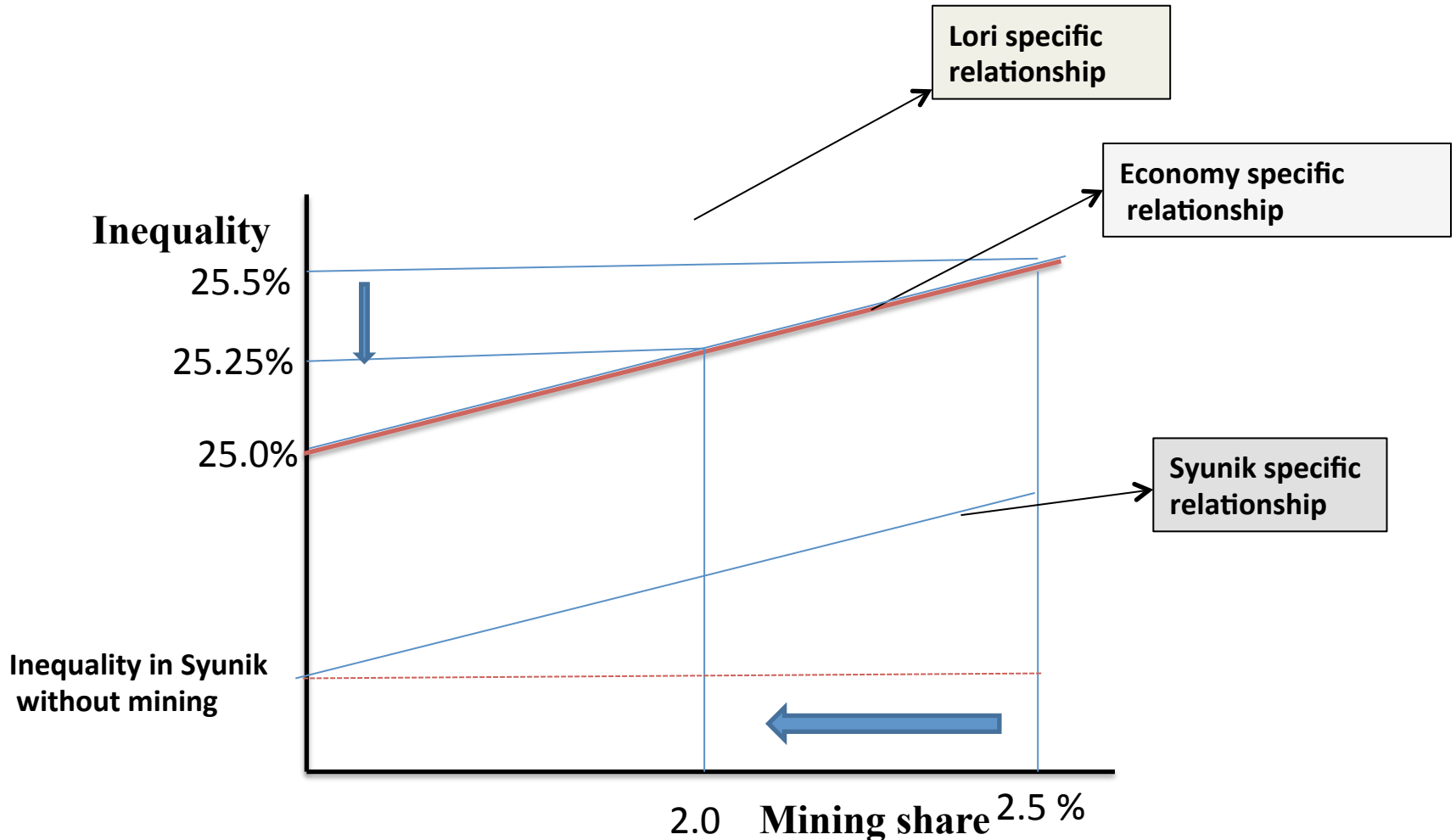
Mining and GDP Growth: Marz Data

- **Strong positive contribution of mining is confirmed by marz-level data, 20% increase in mining share leads to more than 1 percentage point increase in GDP growth**
- **Strong positive causality from mining to growth is due to the crisis period, but not only**
- **A decrease in mining share, however, does not lead to a significant decrease in GDP growth**

Mining expansion accelerates growth but its absence does not reduce growth

Mining and Income Inequality

- A lower share in mining may lead to lower inequality (when controlling for agriculture, service, etc.)



Mining and Income Inequality

- For the whole economy, a lower share in mining leads to a decrease in inequality. That is, decrease in mining decreases equality.
- This relationship remains even when we control for industry structure, remittances, population size, Syunik Marz* included/excluded, and so on.
- Correlation between inequality and mining share is negative, -0.32. However, regression analysis indicates a reverse relationship.
- Marz differences are large – in particular, Syunik and Lori are crucially different in terms of inequality levels

(*) Syunik Marz is the province of Armenia with the highest concentration of mining activity. About 40% of the province's GDP is from mining.

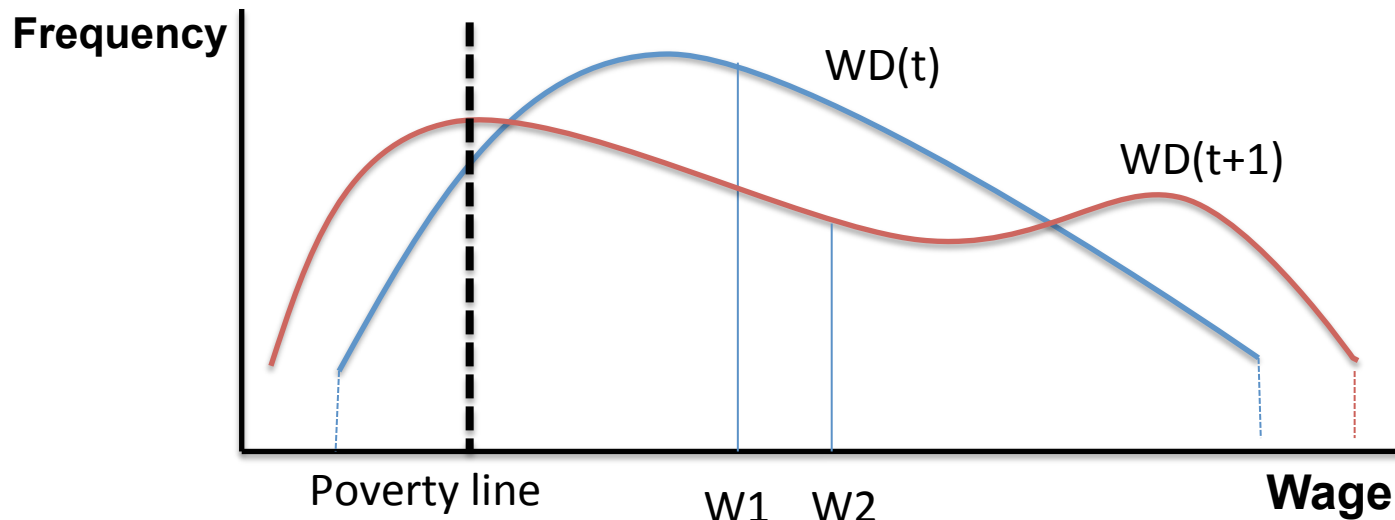
Mining and Poverty

- Mining increases poverty.
- This occurs even when controlling for stage of development, the geographical factor, remittances and industry structure.
- A *0.1* percentage point increase of mining's share in GDP leads to a *0.07 percentage point* increase in poverty. The reverse is also true - a similar decrease in mining leads to a proportional reduction in poverty.
- While the magnitude is not big, it is significant and survives different specifications.

How can such a causality be explained?

Mining and Poverty

- The expansion of mining involves more employees with very low wages, which falls short of the poverty line
- That is, wage distribution not only widens but also puts higher weights to the bottom part



- This becomes realistic especially during the crisis period, when mining firms confront excessive labor supply exploit their monopsony power

End

Thank you

Mining and GDP Growth: Marz Data

Table 1: Growth equation

	(1)	(2)	(3)	(4)	(5)	(6)
	2004-10	2009-10	2004-08	$\Delta min. > 0$	$\Delta min. > 0$	$\Delta min. < 0$
<i>mining</i>	4.104** (1.665)	4.134*** (1.555)	3.359** (1.457)	5.822*** (1.452)	5.404*** (1.468)	.721 (1.184)
<i>agr</i>	1.676*** (.269)	1.669 (1.055)	2.031*** (.553)	2.189*** (.323)	1.937*** (.288)	1.414*** (.342)
<i>const</i>	1.832*** (.273)	2.230*** (.800)	1.048 (.761)	2.606*** (.483)	2.443*** (.532)	1.985*** (.161)
<i>serv_{emp}</i>	1.858*** (.497)	12.634*** (4.151)	1.815 (1.336)	1.993** (.875)	1.528 (.962)	4.548*** (1.545)
<i>export</i>	1.609*** (.184)	1.599** (.693)	1.152*** (.260)	.867* (.521)		2.917*** (.526)
<i>import</i>	-2.610*** (.151)		-1.875*** (.386)	-3.073*** (.565)	-2.358*** (.488)	-3.316*** (.675)
N	77	22	55	41	41	32
R^2 : within	.643	.803	.409	.595	.566	.85

* – 90%,

* – 95%

* – 99%

Dependent variable: **GDP growth**

Data source: **NSS RA**

For future research

- Mining expansion is possible if
 - Productivity increases (wages *may* or *may not* increase)
 - Extensive expansion (more employees but with lower productivity)
- Wage distribution analysis and its interaction to the economy income distribution is needed – a big challenge is to find regional data