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# **Child care, family characteristics and child outcomes**

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- The interest among economists for early child care and child outcomes has grown in the last few years
- motivated by concerns about the potential negative impact of the growth in labor market participation of women with young children.
- Recent data show in fact that mothers' time with children has in fact declined in the last decades, while indicators of several cognitive and non cognitive outcomes of children have worsened.

# Economic approach to early child care



- In recent economics research children's outcomes (school, behavioral, health) are considered as
- the output of a production function in which inputs come from their families as well as from schools, teachers, and peers
- These inputs play a very significant role with a stronger impacts when children are young since cognitive and non cognitive outcomes are largely determined early in life
- If families and institutions intervene early enough, they can affect cognitive, socio-emotional abilities and health.

# Economic approach to early child care



- According to these studies (Heckman and others), early interventions promote also later outcomes, schooling, workforce productivity and reduce inequality.
- In fact, children from disadvantaged environments receive less early investment than children from advantaged backgrounds
- Therefore there is a strong case for public support for funding interventions in early childhood for disadvantaged children.

# Economic approach to early child care



- The literature on the determinants on child outcomes has focused first on mothers' inputs and reported mixed results.
- Two effects are in place:
- While the loss of the mother's child-care time has a negative effect on the child outcomes
- it is also the case that the additional income from mother's employment has positive implications for expenditures on goods consumed by the child.
- Differences in the findings can also be attributed to the fact that mothers' inputs interact with other inputs, such as fathers' inputs and other family members.

# Maternal employment and child outcomes

- While mother's time is a crucial input in the production process of child outcomes, other inputs are important.
- Father's time is also productive, especially in some stages in the child's development process (Del Boca, Flinn and Wiswall 2013).
- Time spent with children by fathers has increased over time, partly offsetting the decline in mother's time spent with the child
- Other important inputs come from the school and quality changes by school types.

# The impact of child care on child outcomes

- In Europe public child care prevails which is on average higher quality and more homogenous across schools.
- However, the availability of public child care may change across areas or regions given that child care supply often depends on local institutions.
- Only very recently the impact of public child care on child outcomes have been studied in Europe (Germany, Spain, Norway, Italy)

# The impact of child care on child outcomes:

## Germany



- Felfe and Lalive (2012) study the West German setting, where large differences in public child care exist across areas and in some areas are severely rationed (from 7% to 18% in 2010).
- They find positive effects of child care on language skills (es. on the ability to listen to a story) and on social skills in the short run.
- Children who benefit more are those coming from families where parents have lower education and income.



# The impact of child care on child outcomes: Spain

- Felfe, Nollenberger and Rodriguez-Planas (2012) analyze the effects of introduction of public child care for 3-years old children in Spain in the 1990 on their cognitive outcomes at 15, using data from PISA 2003, 2006 and 2009.
- They estimate a sizable increase in reading and math test scores following the reform.
- They also find stronger effects for girls and for children with low educated parents.

# The impact of child care on child outcomes:



## Norway

- Havnes and Mogstad (2011) analyze the impact of a large increase in childcare supply in Norway in the late 1970
- Their results suggest a positive and significant impact of childcare coverage on educational outcomes, such as years of education and college attendance, but also on long-term outcomes, such as adult earnings.
- Their results show that the impact is much stronger for children of low educated parents.

# The impact of child care on child outcomes: Italy



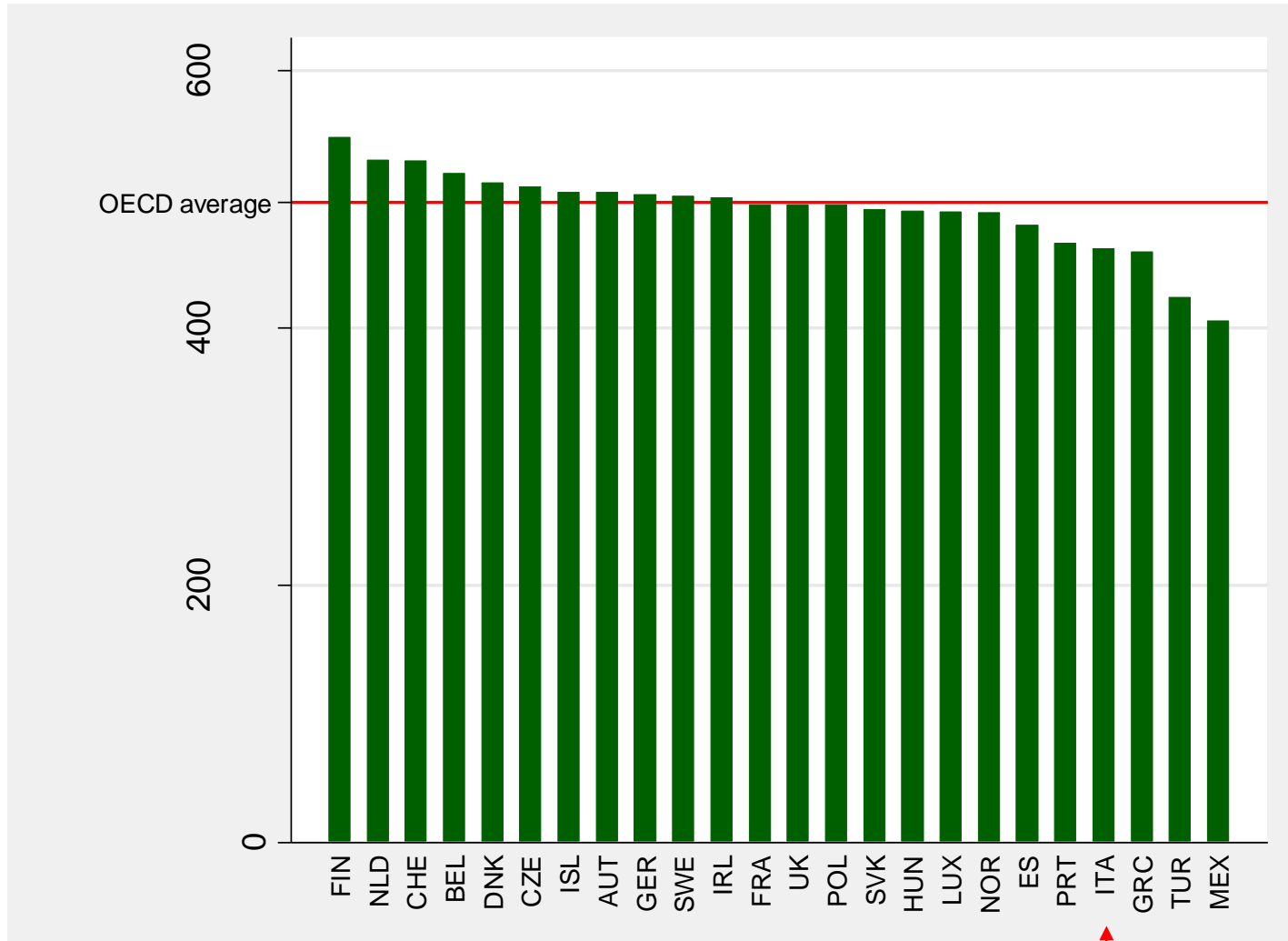
- In Italy (as in other Mediterranean countries) the debate on the importance of the educational strategies of *early intervention* has been neglected until recently.
- Given the low proportion of working mothers in Italy and the low birth rate, one could argue that the problem is less crucial with respect to other countries.
- Italian families should have more time to dedicate to their children, with positive implications for their cognitive and behavioural development.

# The impact of child care and child outcomes: Italy

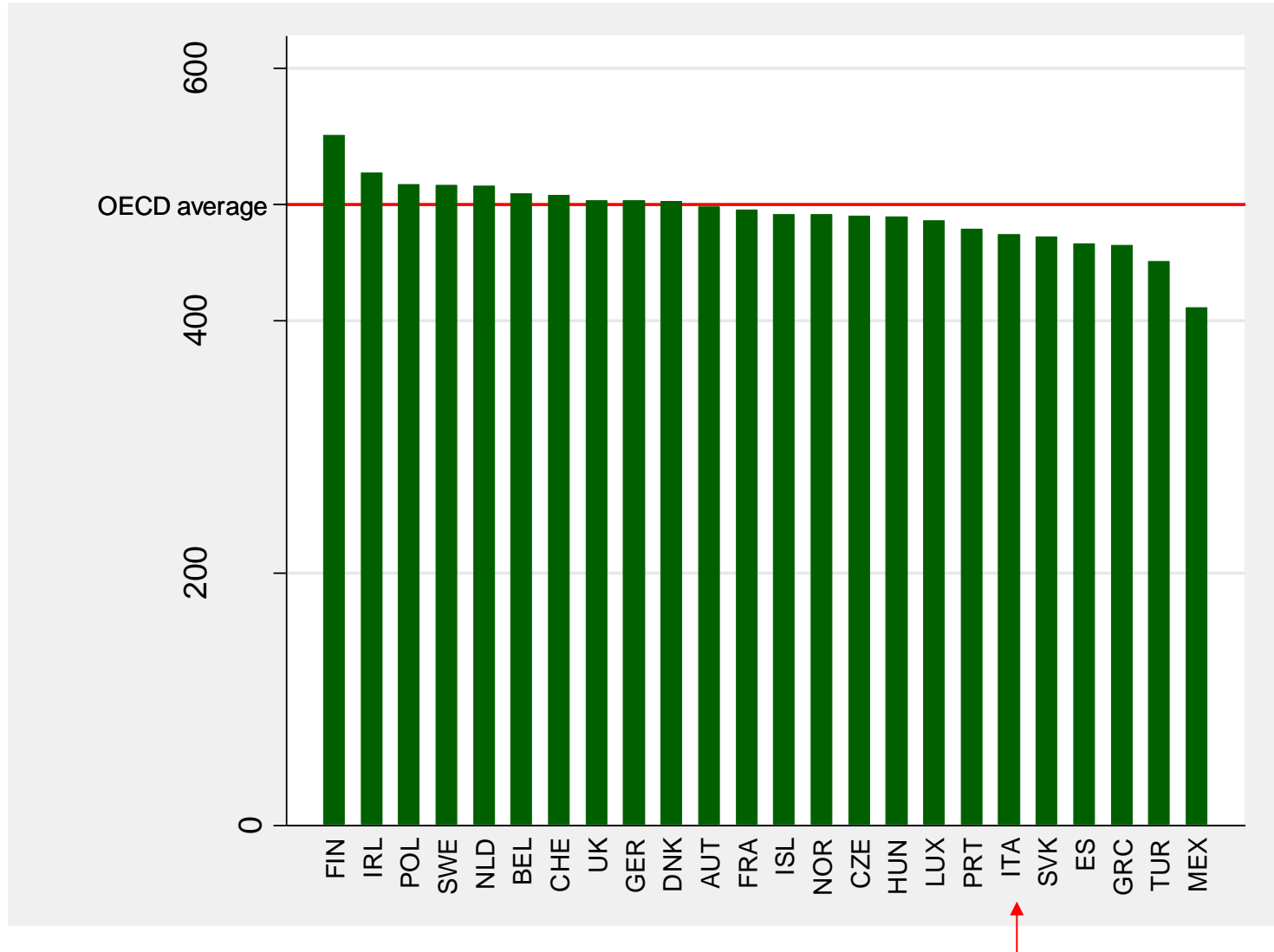


- However, from comparative data it can be seen that:
- Italian children do not obtain better results than children of the same age in other industrialised countries
- On the opposite, for many years, fifteen-year-old Italians have obtained worse results (PISA-OECD).

# PISA math



# PISA reading

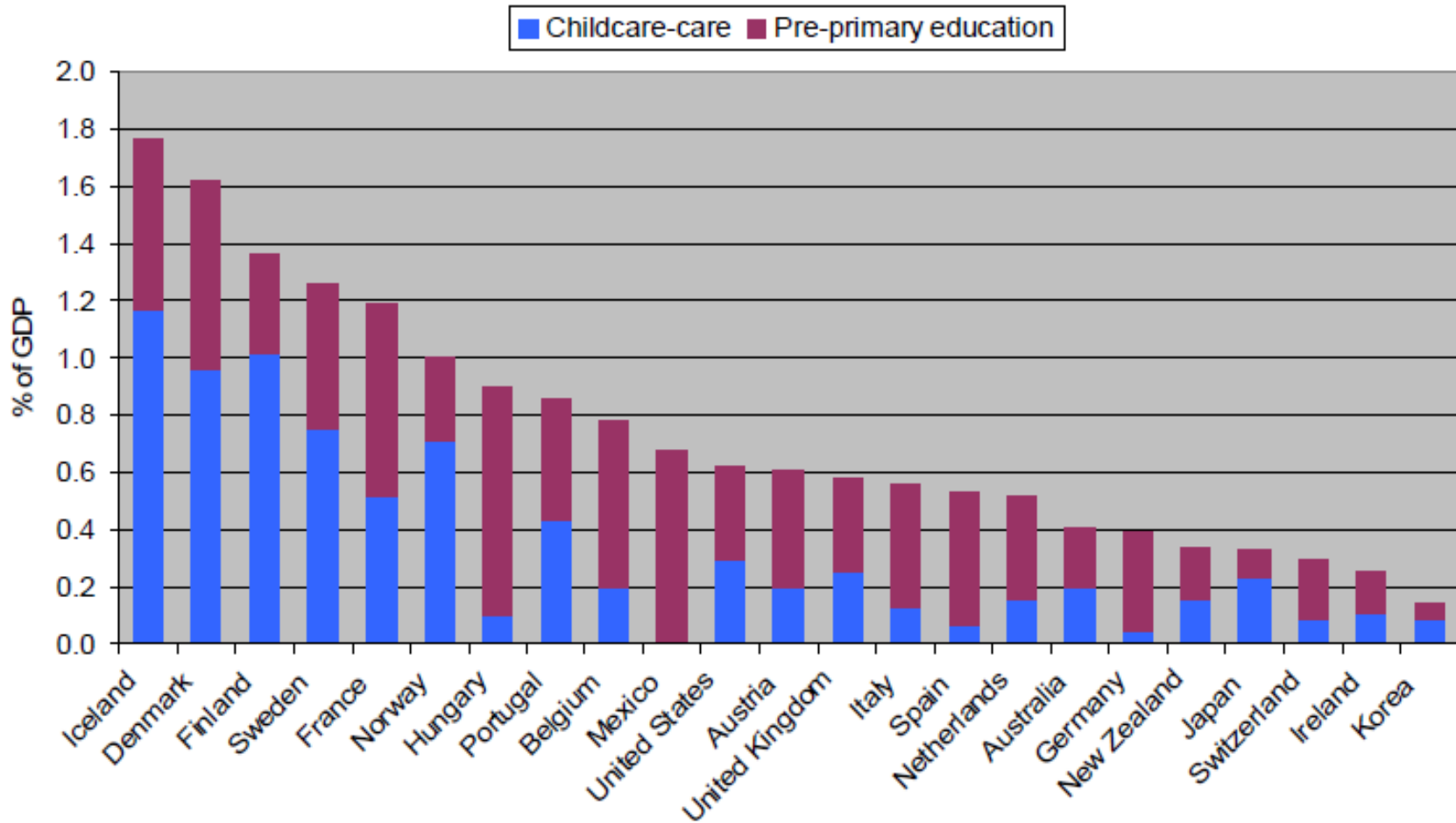


# The impact of child care on child outcomes: Italy



- As recent OECD data show Italy spends much less than other countries for children in preschool age,
- less with respect to the spending for older children, in contrast with the *early intervention* approach.

# Public expenditure on early childhood services (0-6 years) as a percentage of GDP in selected OECD countries





# The impact of child care on child outcomes:

## Italy



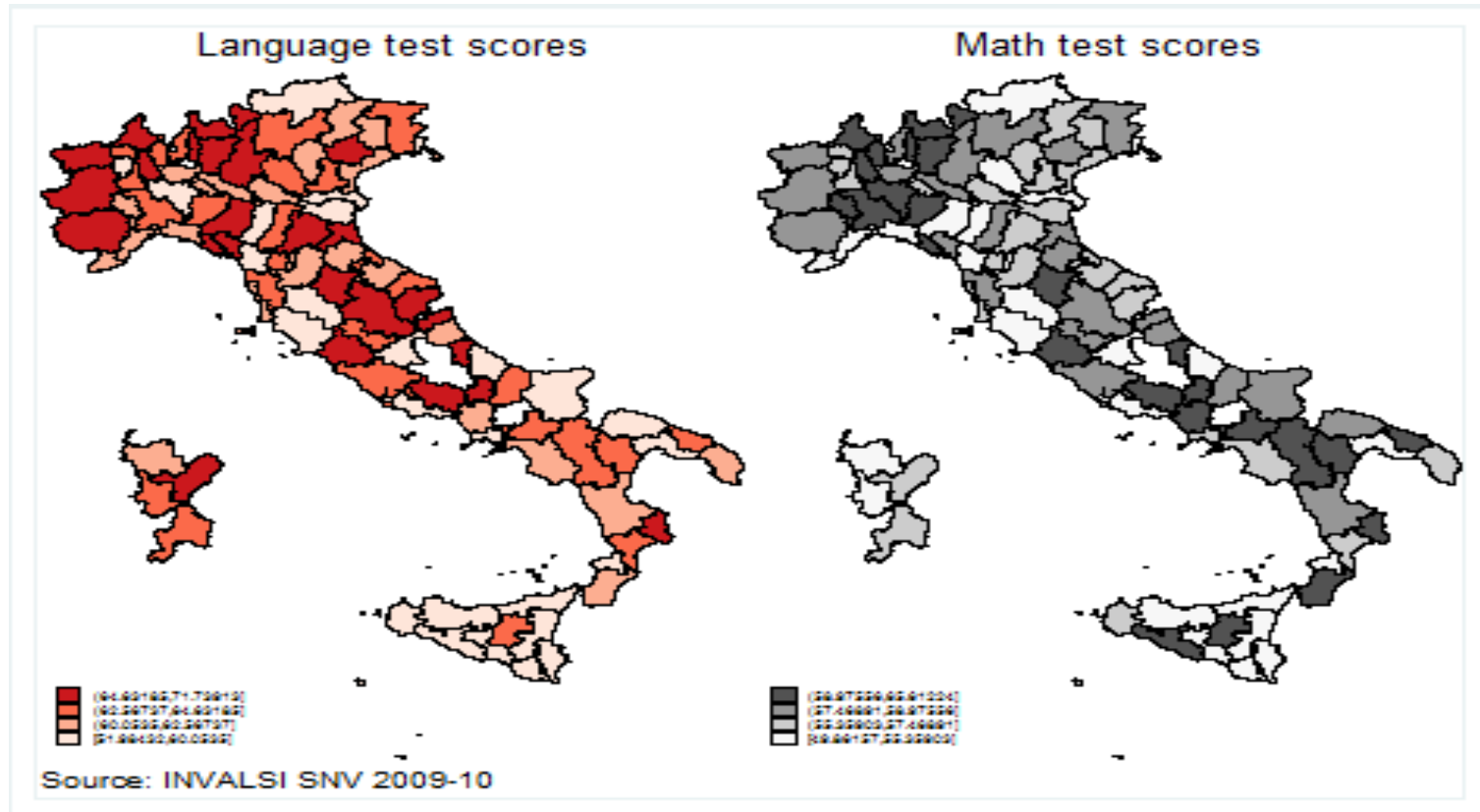
- Brilli, Del Boca Pronzato (2013), have explored the impact of public child care on child outcomes in Italy, using INVALSI data
- Since 2009, the Italian Institute for the Evaluation of the Education System (INVALSI) provides the only ongoing national survey of students' educational achievements at primary school.
- These assessments measure the abilities of students in elementary school

# The impact of child care and child outcomes

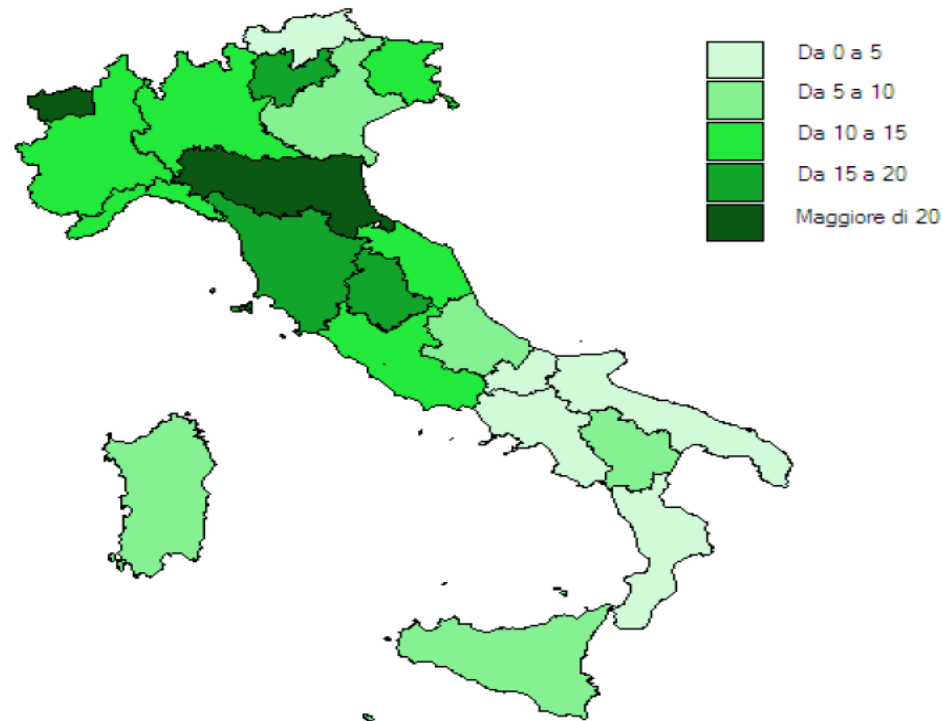


- Our dependent variables are mothers' employment and children's scholastic achievements in Language and Math tests scores in second elementary school.
- Children perform better in Language than in Math and the average is better for Northern and Central regions of Italy
- The supply of public child care 0-3 is much larger in the North and Central regions.

# Test scores by regions – from INVALSI data



# Availability of public child care by region (childcare/n. of children 0-3)



# The impact of child care on child outcomes: Italy



- Each municipality establishes eligibility requirements so that the number of available slots can be assigned to households that may benefit more.
- The access criteria are related to the socio-economic conditions of the household, having one or both parents employed, living with a single parent.

# The impact of child care on child outcomes: Italy



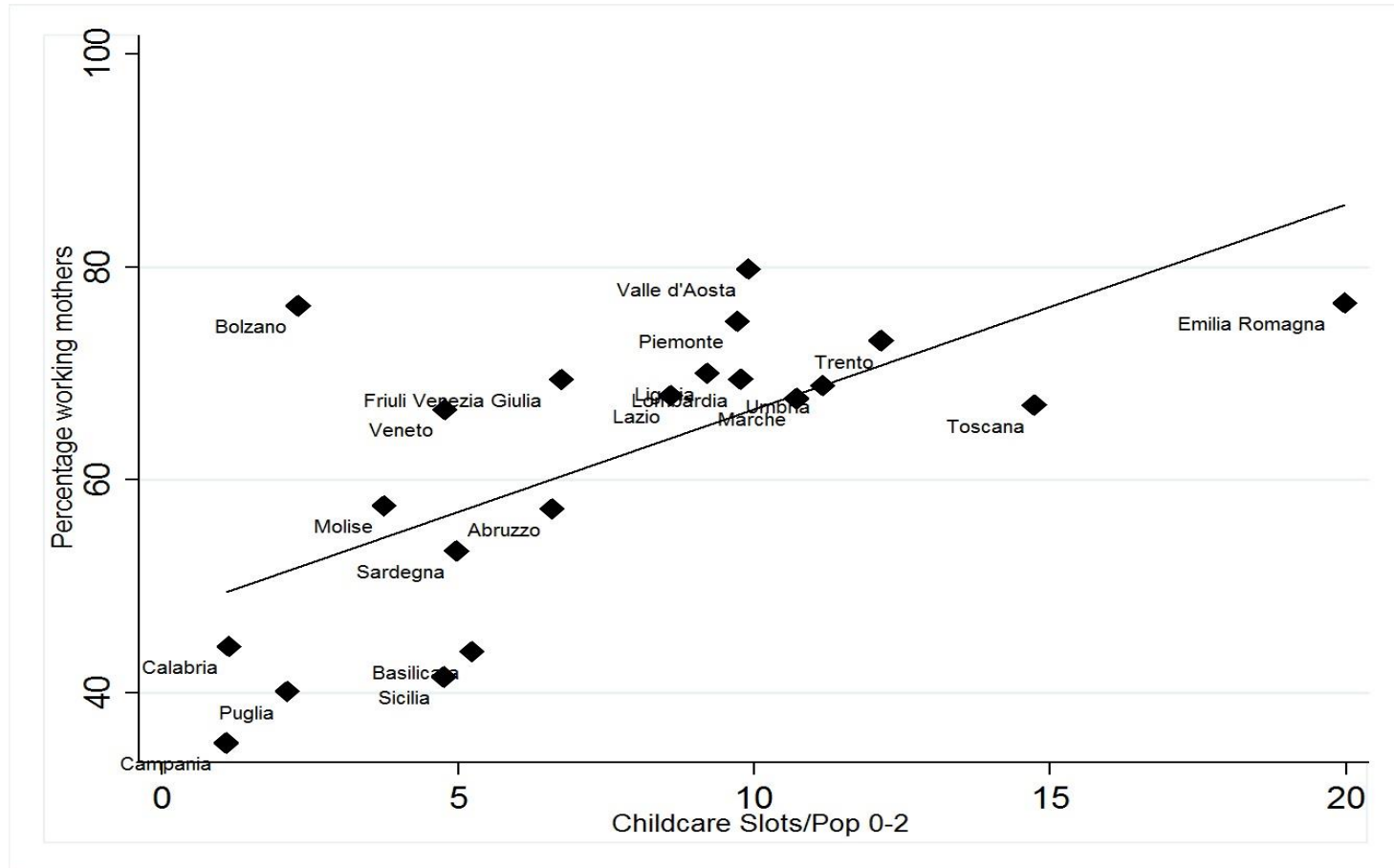
- Thus, according to these access criteria, public child care can be viewed both as
- support for the early education and the social inclusion of children from disadvantaged environments and/or as
- support for families to reconcile work and parenthood during the childbearing years

# The impact of child care on child outcomes: Italy



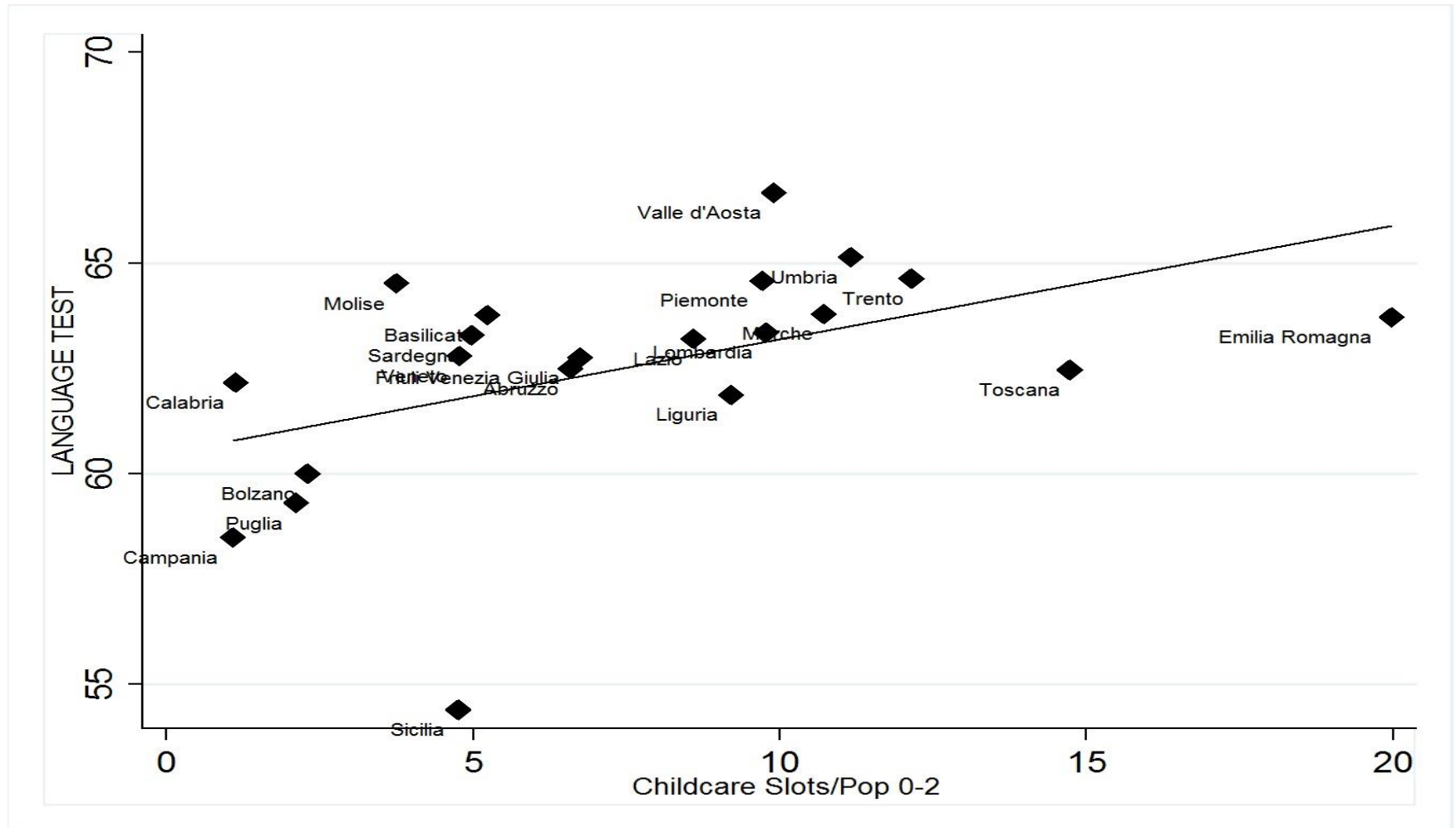
- Both outcomes are particularly important for Italy
- On one hand, in fact, among low income households, there is a growing number of children from immigrant families, whose social integration may be favored by child care attendance.
- On the other hand, a large proportion of mothers leave their jobs after the birth of the first child, especially among low educated mothers

# Correlation child care and mothers work





# Correlation child care and test scores (reading)



# The impact of child care on child outcomes: Italy



- 1) In the base specification, we use OLS and GLS in order to take into account the error components at provincial level. In the analysis we take into account several indicators of mothers, fathers, and children characteristics as well as socio-economic and GDP characteristics of the environment.
- We find that a percentage change in public child care coverage increases mothers' probability to work by 1.3 percentage points and children's Language test scores by 0.85 percent of one standard deviation. We do not find any effect on Math test scores.

# The impact of child care on child outcomes: Italy



- 2) we take into account the potential non-linearity in child care impacts to see whether they change if the service is more rationed, i.e. less available.
- we allow for a non-linear effect adding a quadratic term of child care availability
- We find that in areas where the supply of child care is more limited, the impact of a percentage change in child care supply on both mothers' employment and Language test scores is greater.

# The impact of child care on child outcomes: Italy



- In areas where fewer slots are available, criteria rules become more relevant.
- In this case the social planner can select households, which may benefit more from the policy,
- providing mothers an alternative forms of care if they want to work
- providing children coming from disadvantaged backgrounds better early educational inputs.

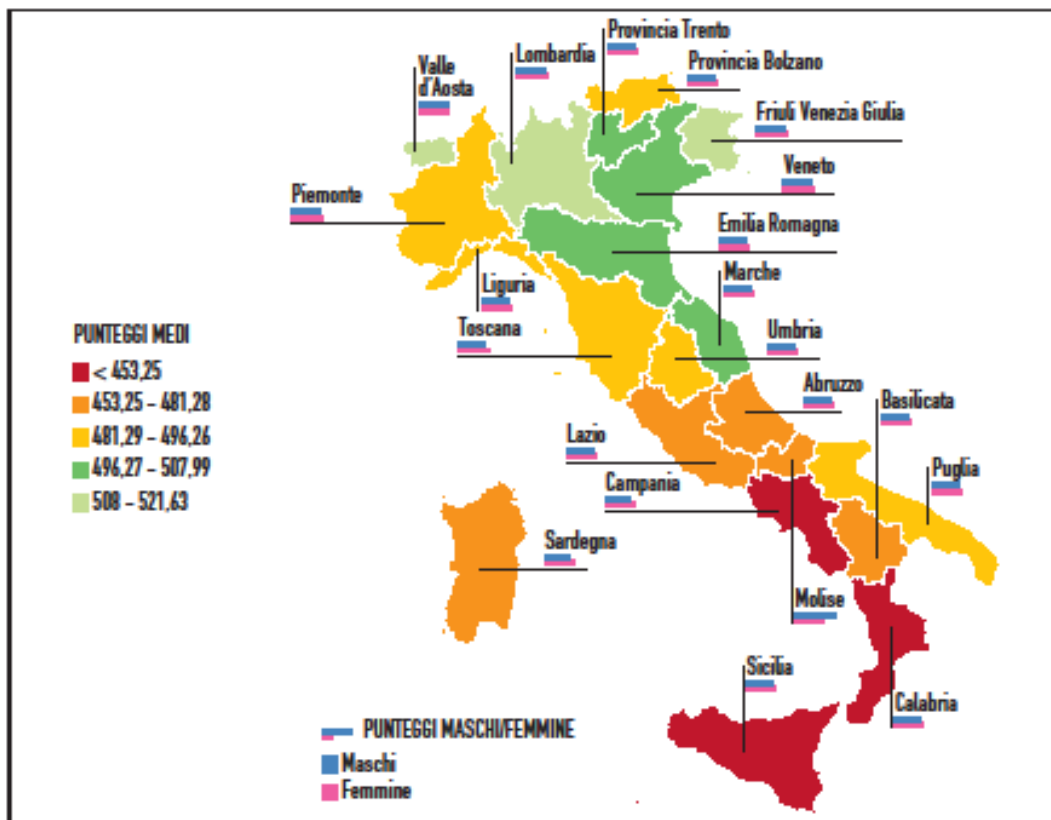
## Further research



# The impact of child care and child outcomes in the long run: Italy

- In another ongoing study (del Boca et al 2013), we analyze the impact of child care on child outcomes in the long run.
- The ISFOL dataset provides information on grades achieved in junior high school, high school and university
- In 2008, the survey also includes retrospective information on whether during the first three years of life, the interviewed was enrolled in childcare and whether his/her mother was working

# Test scores by regions (PISA data)



Fonte: PISA / Ocse

## Further research



# The impact of child care and child outcomes in the long run: Italy

- We estimate the probability of obtaining high grades as depending on the participation in childcare in the first three years of life and the maternal working status when the individual was 0-2 years old
- We addressed the issue of endogeneity of the two variables using as instruments regional supply and fathers education for child care and regional unemployment rate for mothers work.

## Further research



# The impact of child care and child outcomes in the long run: Italy

- These results show that mothers' work, reducing the time dedicated to the children, has negative effects on child cognitive outcomes.
- However this impact is compensated by the use of public childcare which has significant and positive impacts
- The positive effects of childcare are greater for the children who come from families with a lower level of education/income.



# Conclusions

- Childcare is important not only as a support for parents to conciliating work and the family
- but also for the cognitive outcomes of the children
- Both roles are important, especially in disadvantaged contexts contributing to compensate for the inequalities.

# Conclusions

- What conclusions can we draw from the study in terms of possible policies?
- It is crucial to invest more to increase the availability of public child care especially in countries such as Italy, Germany and Spain.
- Nevertheless, increasing the quantity is not sufficient. It is necessary to continue to investing in the quality of the service.
- This is the only guarantee that the childcare maintains its role of early investment.