

# Female Labor Force Participation, Education, and Economic Growth in an Ageing Society: Evidence from Mexico

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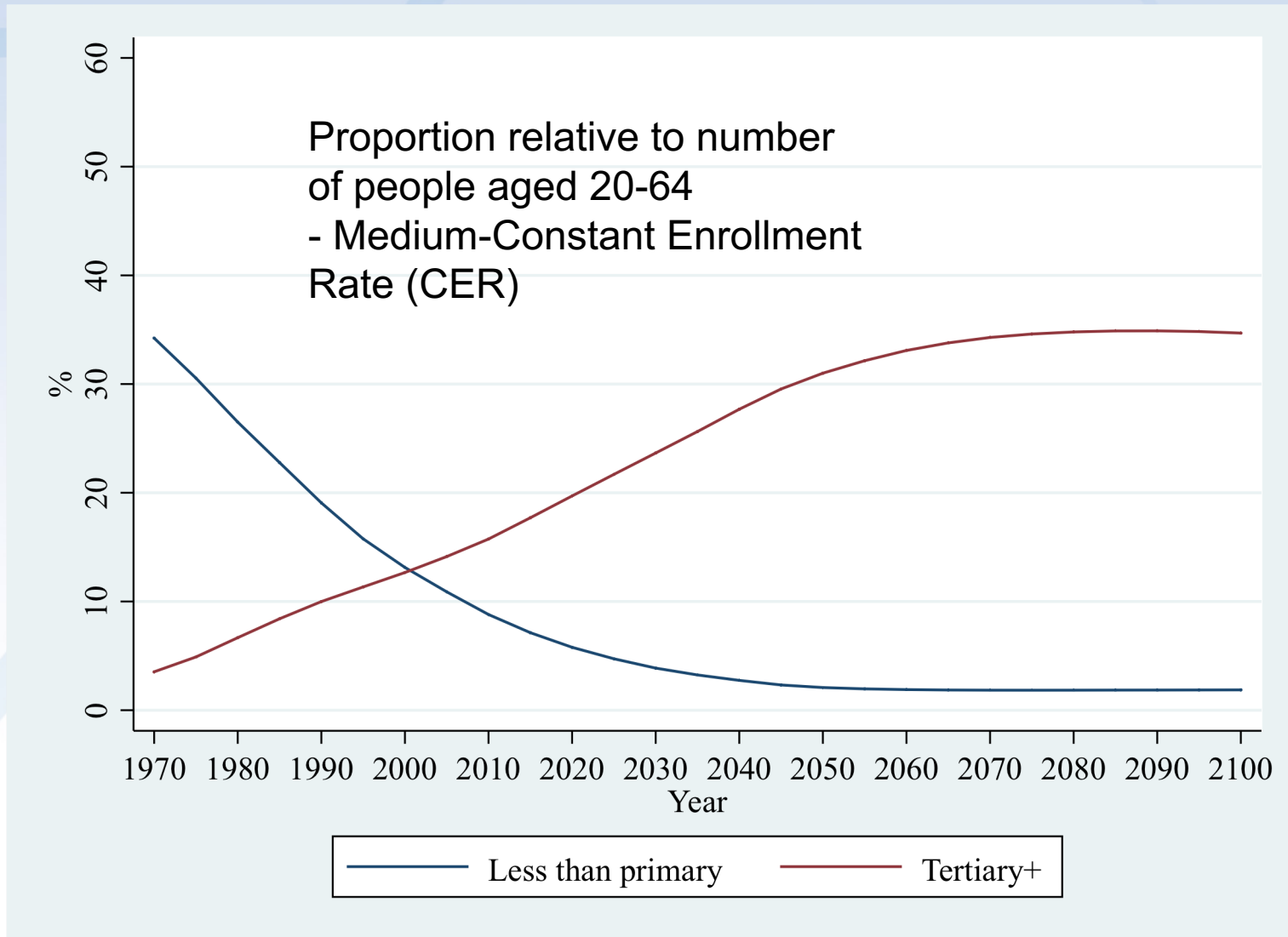
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# 1. Background

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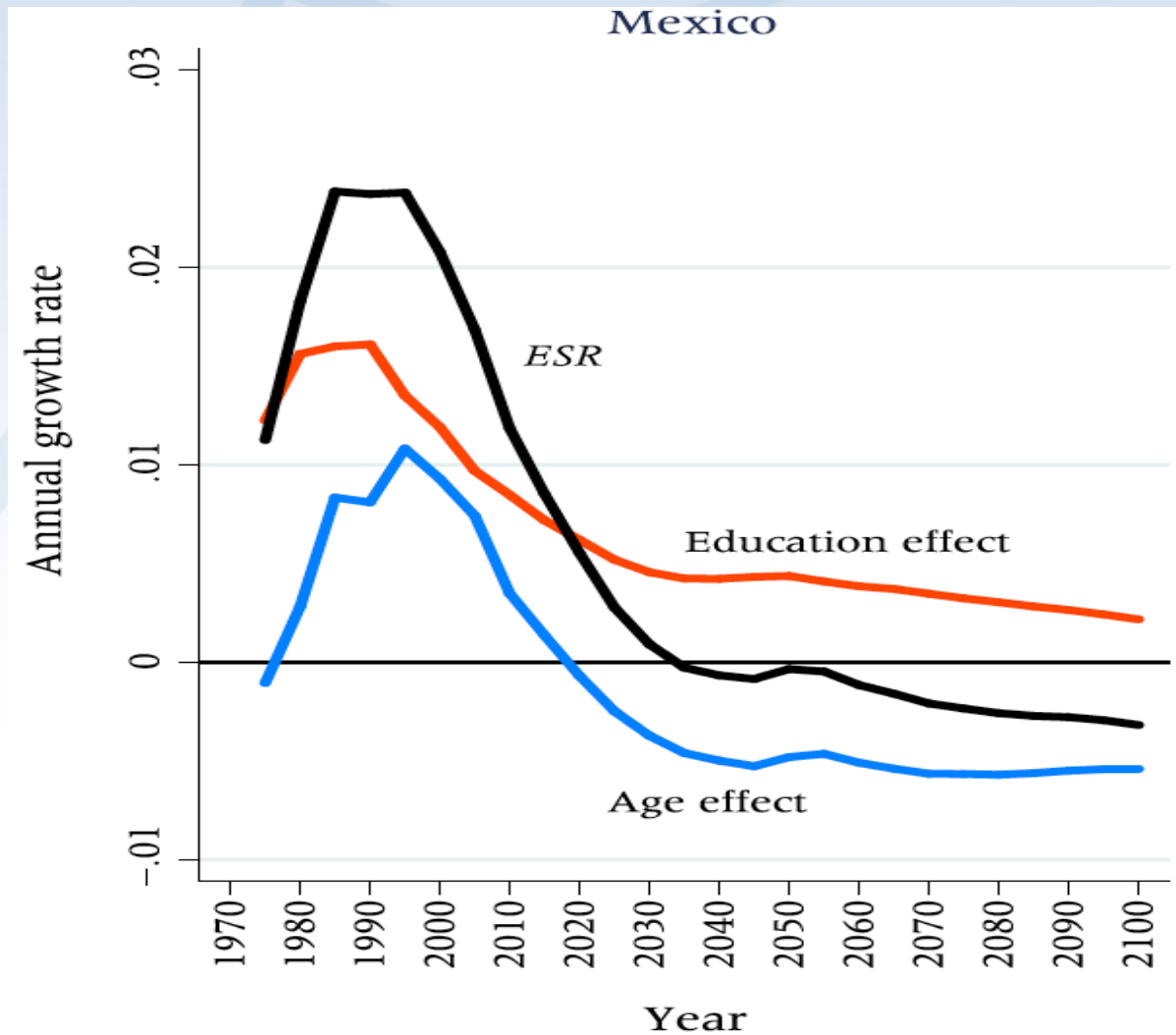
- Bloom and Williamson (1998)
- Mason and Lee (2006)
- Lutz, Crespo-Cuaresma, and Sanderson (2008); Crespo-Cuaresma, Lutz, and Sanderson (2014)
- Rentería et al. (2016)
- Mason, Lee and Jiang (2016)
- Sánchez-Romero (2018)

# Educational expansion in Mexico (1970-2100)

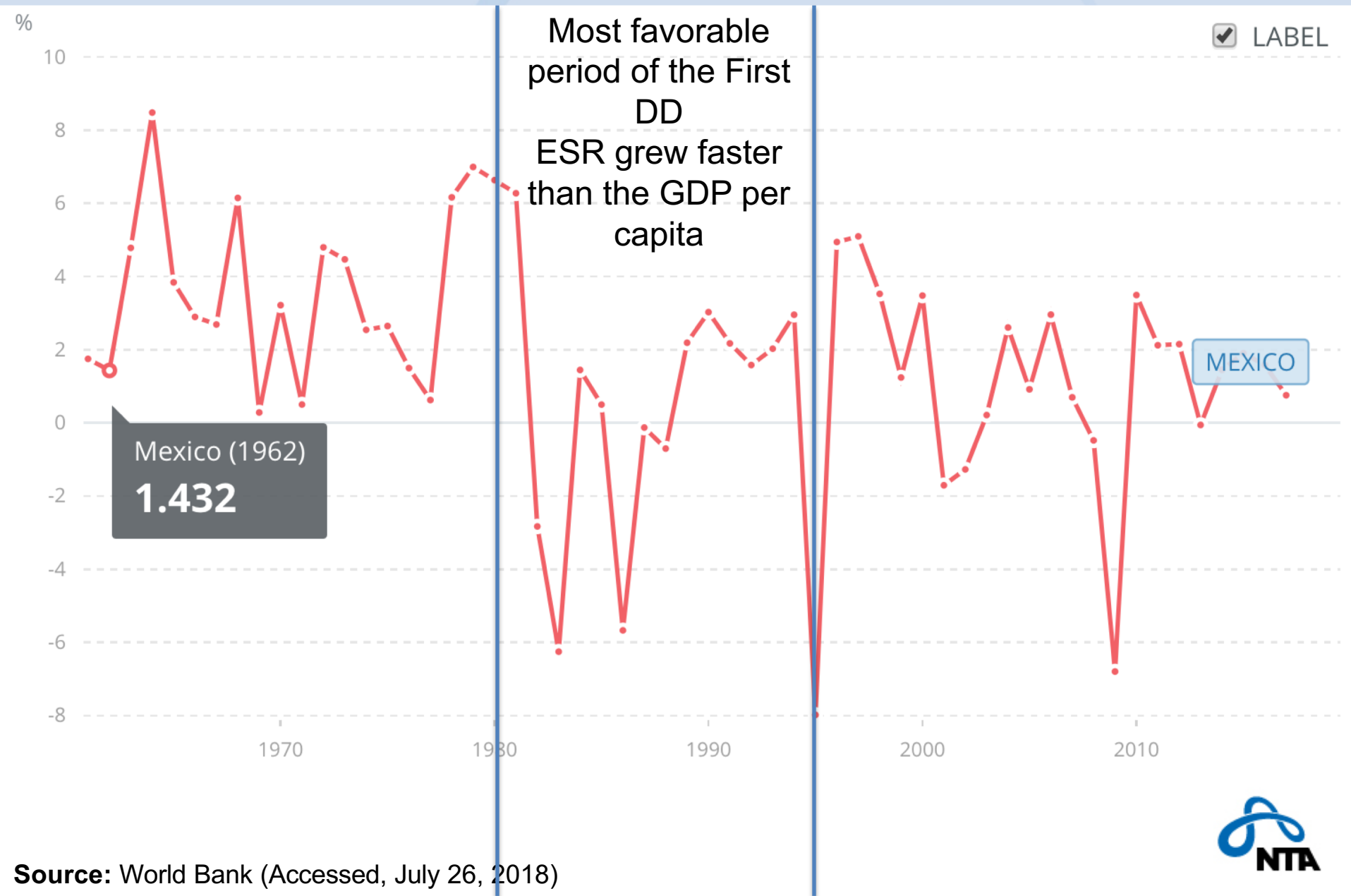


**Source:** Authors' with information from Wittgenstein Centre for Demography and Global Human Capital (Date last accessed, July 26)

# Education dividend



# GDP per capita growth (%)



## 2. Motivation

# Education and growth

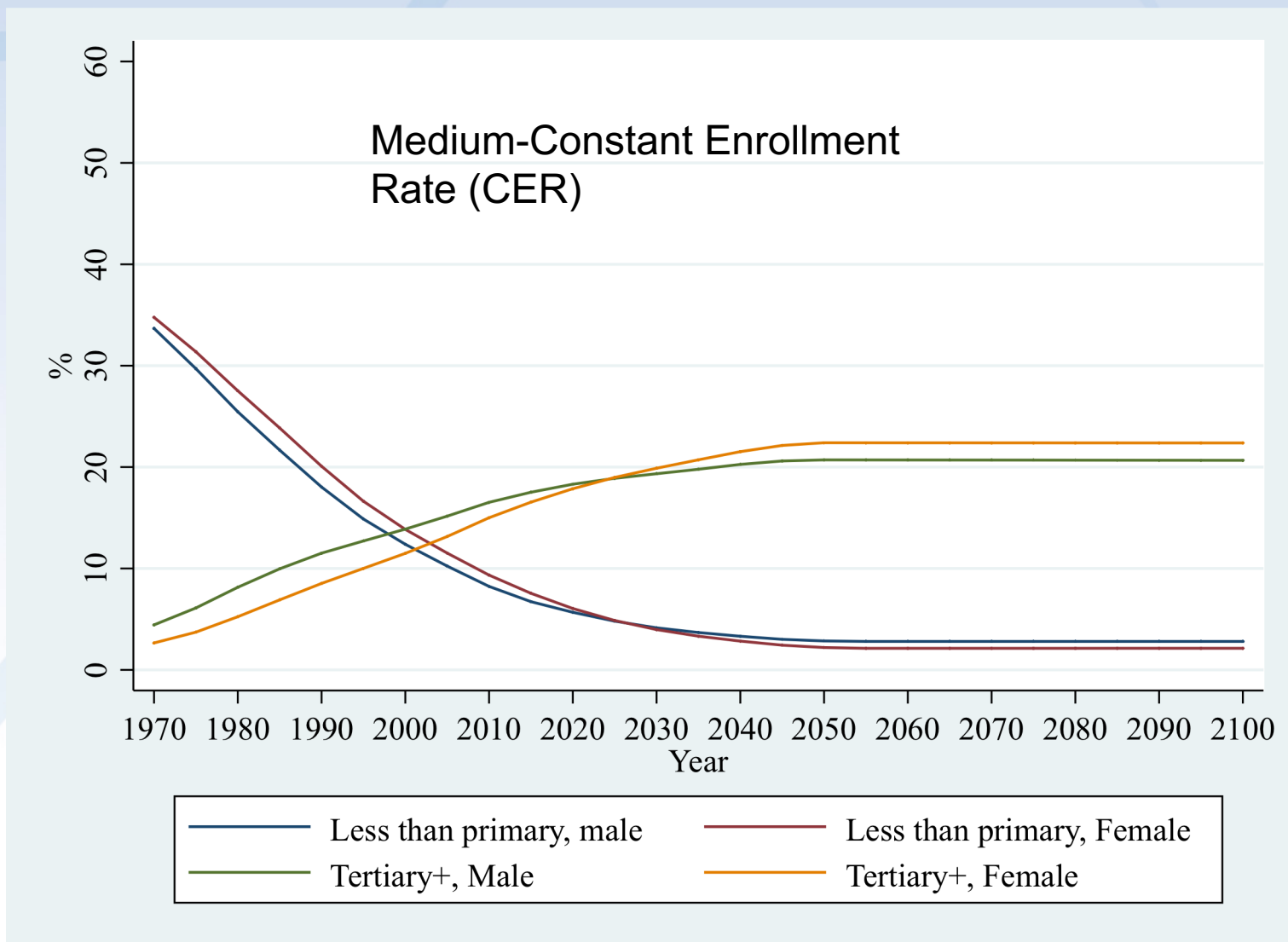
- Effect of educational expansion on per capita growth
- Is educational achievement a mechanism for upward mobility for those raised in poverty?
- Education is correlated with income inequality
  - Closing the gap between SES groups can boost GDP?



# Gender inequality in the labor force

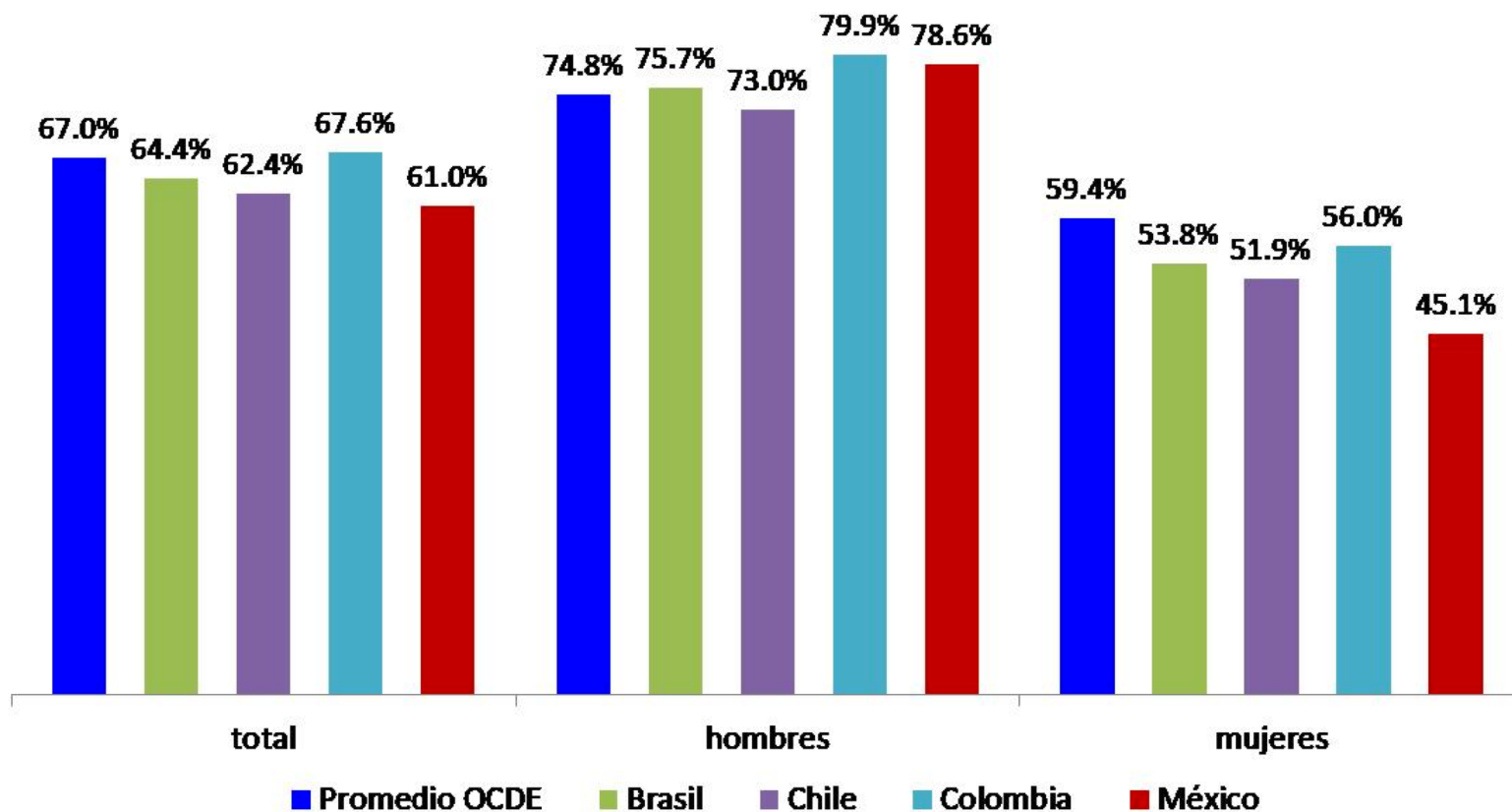
- Closing the gaps between male and female employment may have important economic implications
- Reducing gender inequality could play a key role in addressing the twin problems of population ageing and pension sustainability
- **Caring work drains people of time, money and opportunities**
  - Gender division of labor is very traditional
  - Gender inequalities in time use and economic activity impact in different ways

# Educational expansion in Mexico by sex (1970-2100)



# Employment rates at age 15-64 by sex (OECD VS. LA)

**Tasa de empleo de personas entre 15 y 64 años:  
promedio de la OCDE versus países latinoamericanos  
(por género, cifras de 2015)**



Fuente: OCDE (<http://stats.oecd.org/Index.aspx?QueryId=64196>).

# Sustainable Development Goals

- **SDG 5:** Achieve gender equality and empower all women and girls
- **SDG 10:** Reduce inequality among and within countries

# Objective

- We keep these specific goals in mind to assess the economic effects of ageing in Mexico, where important gender and economic inequalities persist in the labor market
- We build on the recent literature to analyze the combined effects of changes in the female labor supply and the expansion of education on the demographic dividend of Mexico

# 3. Methods

# Data

- National Income and Expenditure Surveys (ENIGH-INEGI)
- System of National Accounts (SCNM – INEGI)
- Administrative records (Cuenta Pública – SHCP)
- Wittgenstein Centre Data Explorer (1970-2100) – 1) Medium (SSP2), 2) Medium-Constant Enrolment Rate (SSP2-CER), 3) Medium Fast-Track Education (SSP2-FT)
- National Time Use Survey (ENUT 2014)
- National Survey on Occupation and Employment (ENOE 2014)

# Levels of Education

**Table 1.** Levels of education and equivalent years in the Mexican system.

<b>Stratum</b>	<b>Level of education</b>	<b>Years of education (completed)</b>
I	None, kindergarten, or incomplete primary	[0-6)
II	Primary or incomplete lower secondary	[6-9)
III	Lower secondary or incomplete upper secondary	[9-16)
IV	Undergraduate, Master or PhD	16 or more

Source: Own with information from ENIGH 1994 and 2004.

- Education levels of the household head account for income inequality more than some other factors?



# Demographic Dividend: Age, Education, and Sex Effects

- We build on Mason (2005) and Mason & Lee (2006) to define the demographic dividend using the following expression:

$$\begin{aligned}
 g(SR) &= g(L) - g(C) \\
 &= \frac{L(T) - L(t)}{L(t)} - \frac{C(T) - C(t)}{C(t)}.
 \end{aligned} \tag{1}$$

- After applying Das Gupta (1993) decomposition to the change of YL and C over time ( $T=t+x$ ):

$$\begin{aligned}
 L(T) - L(t) &= \underbrace{[R_L(T) - R_L(t)]}_{\text{Rate-effect}} + \underbrace{[A_L(T) - A_L(t)]}_{\text{Age-effect}} + \underbrace{[E_L(T) - E_L(t)]}_{\text{Education-effect}} + \underbrace{[S_L(T) - S_L(t)]}_{\text{Sex-effect}} \\
 &= R_L + A_L + E_L + S_L,
 \end{aligned}$$

- we can decompose (1) as:

$$g(SR) = \frac{R(L) + A(L) + E_L + S_L}{L(t)} - \frac{R(C) + A(C) + E_C + S_C}{C(t)}. \tag{2}$$

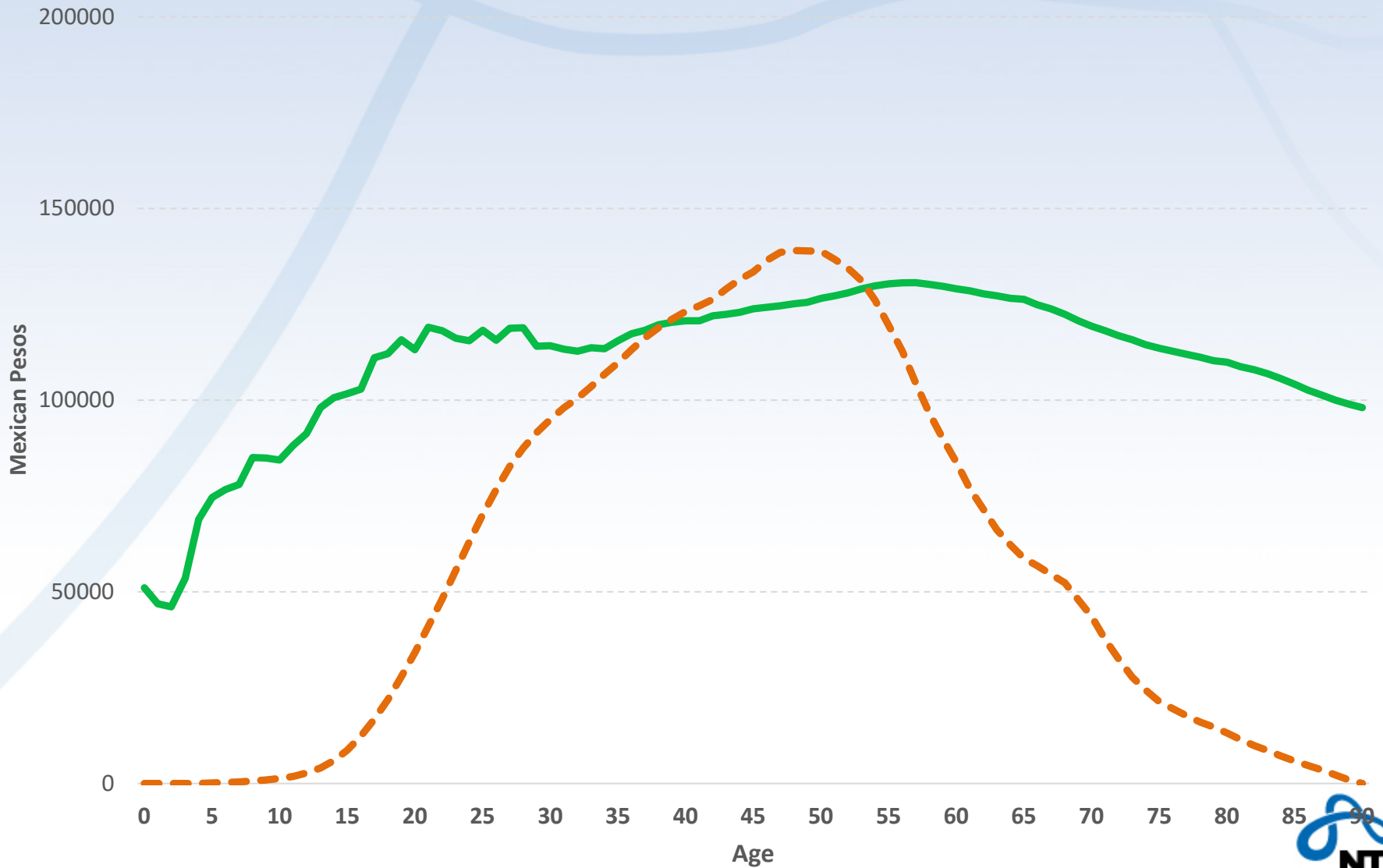
# Demographic Dividend: Age, Education, and Sex Effects

- We use NTTA data disaggregated by SES to simulate the potential effect of increasing the labor force participation of women
- We explore alternative scenarios that reflect productive activities with higher added-value, under different scenarios of educational expansion

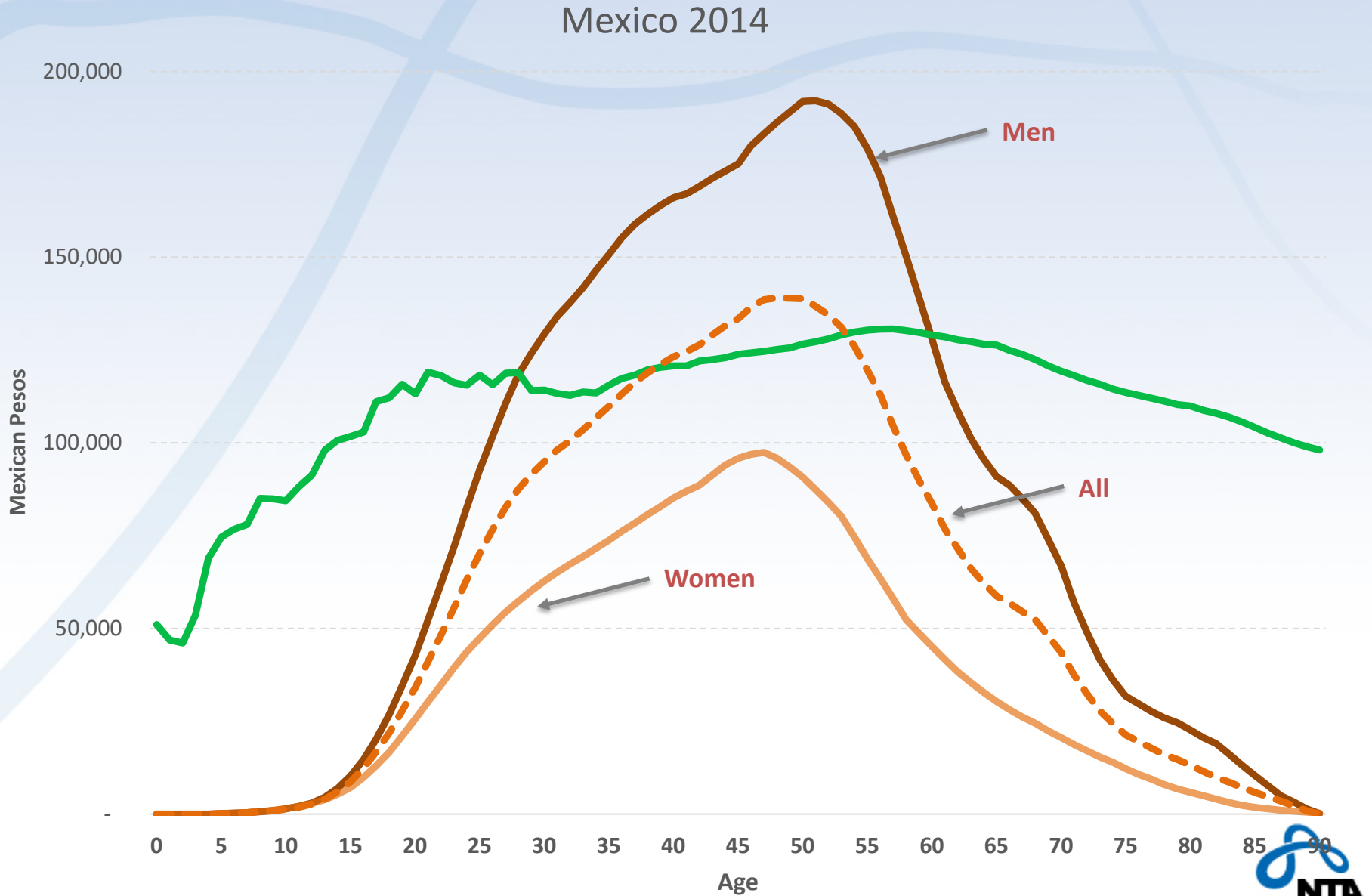
# 4. Results

# Average labor income and consumption

Mexico 2014

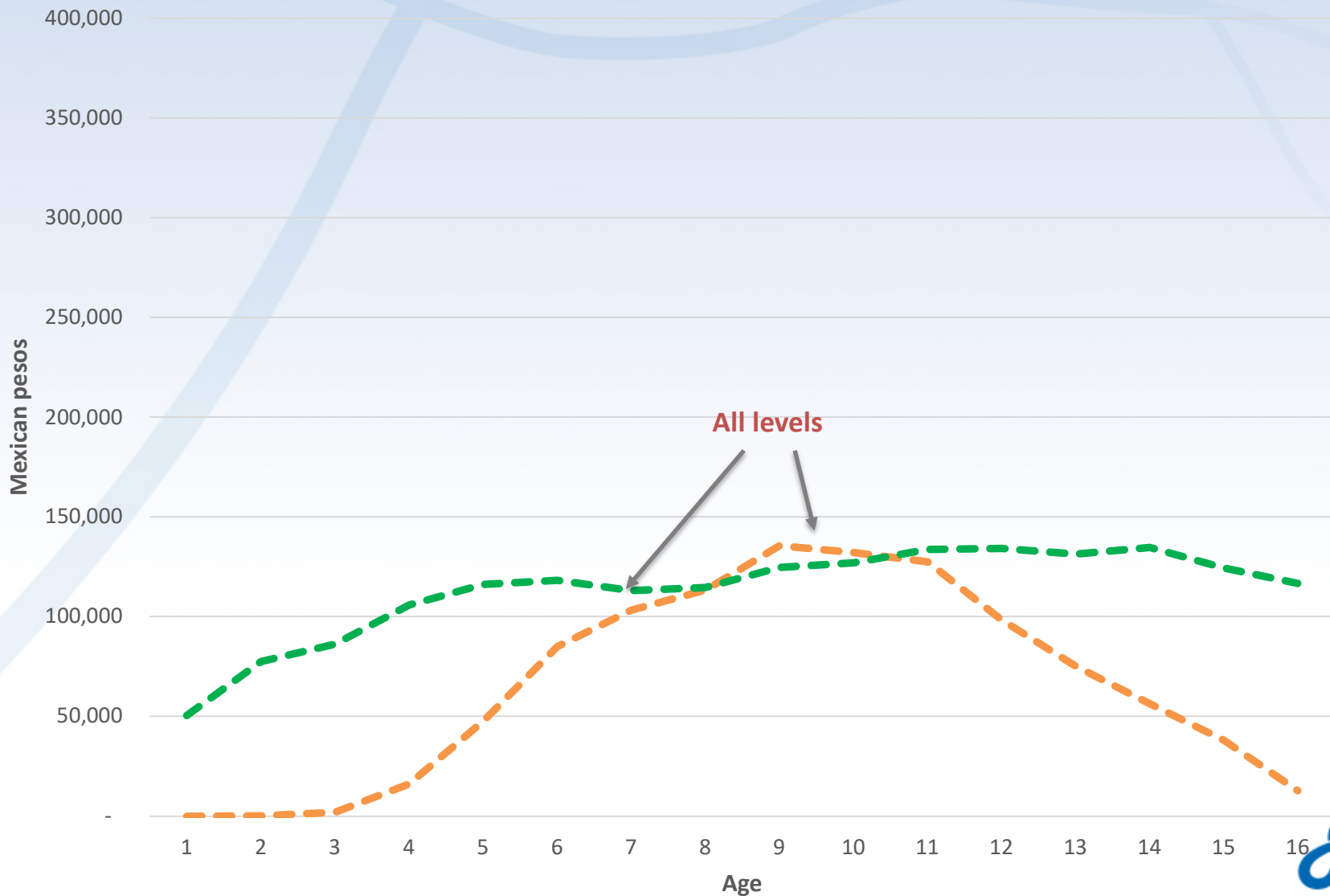


# Average labor income and consumption by sex



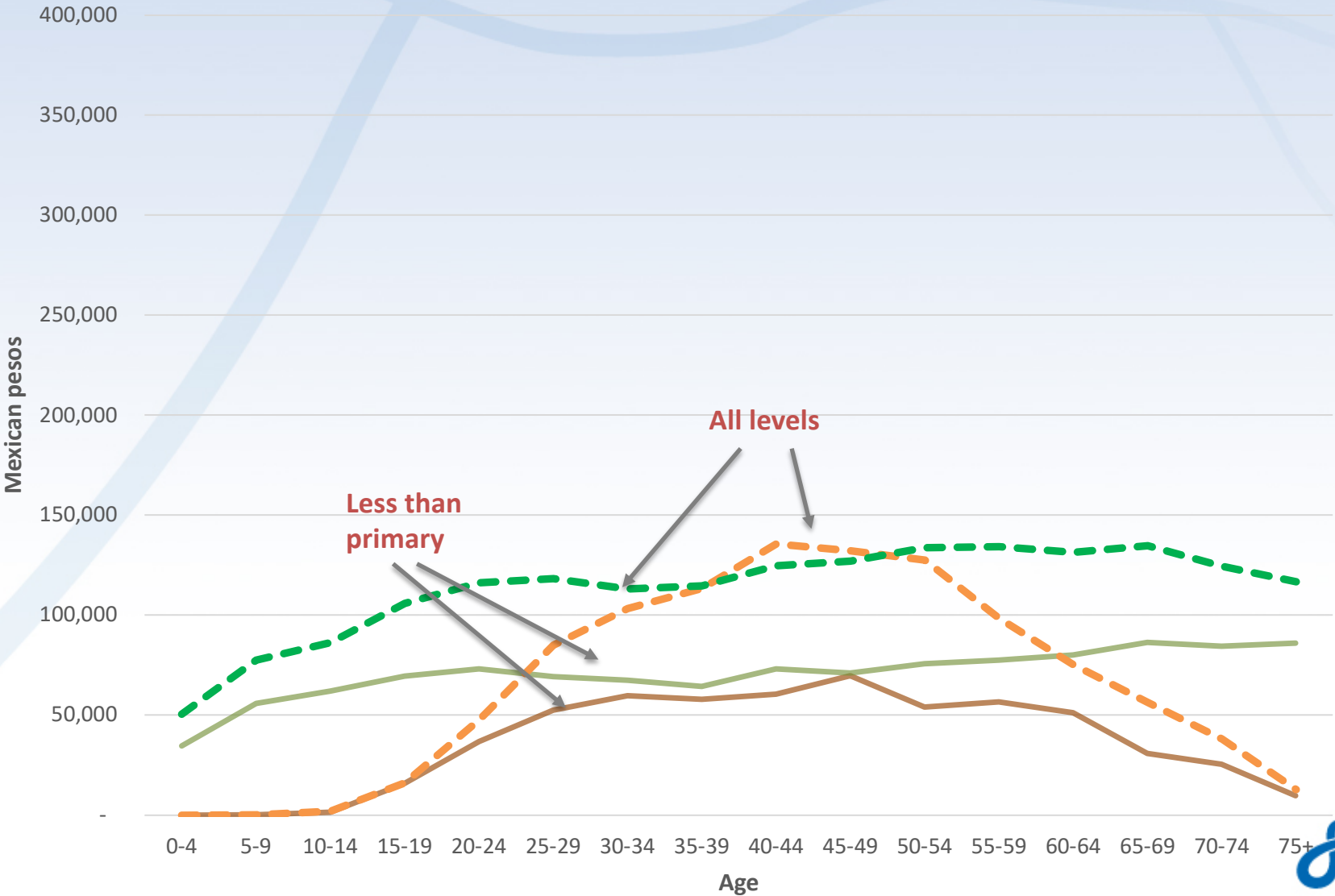
# Average Labor Income and Consumption by Education of Household Head

Mexico 2014



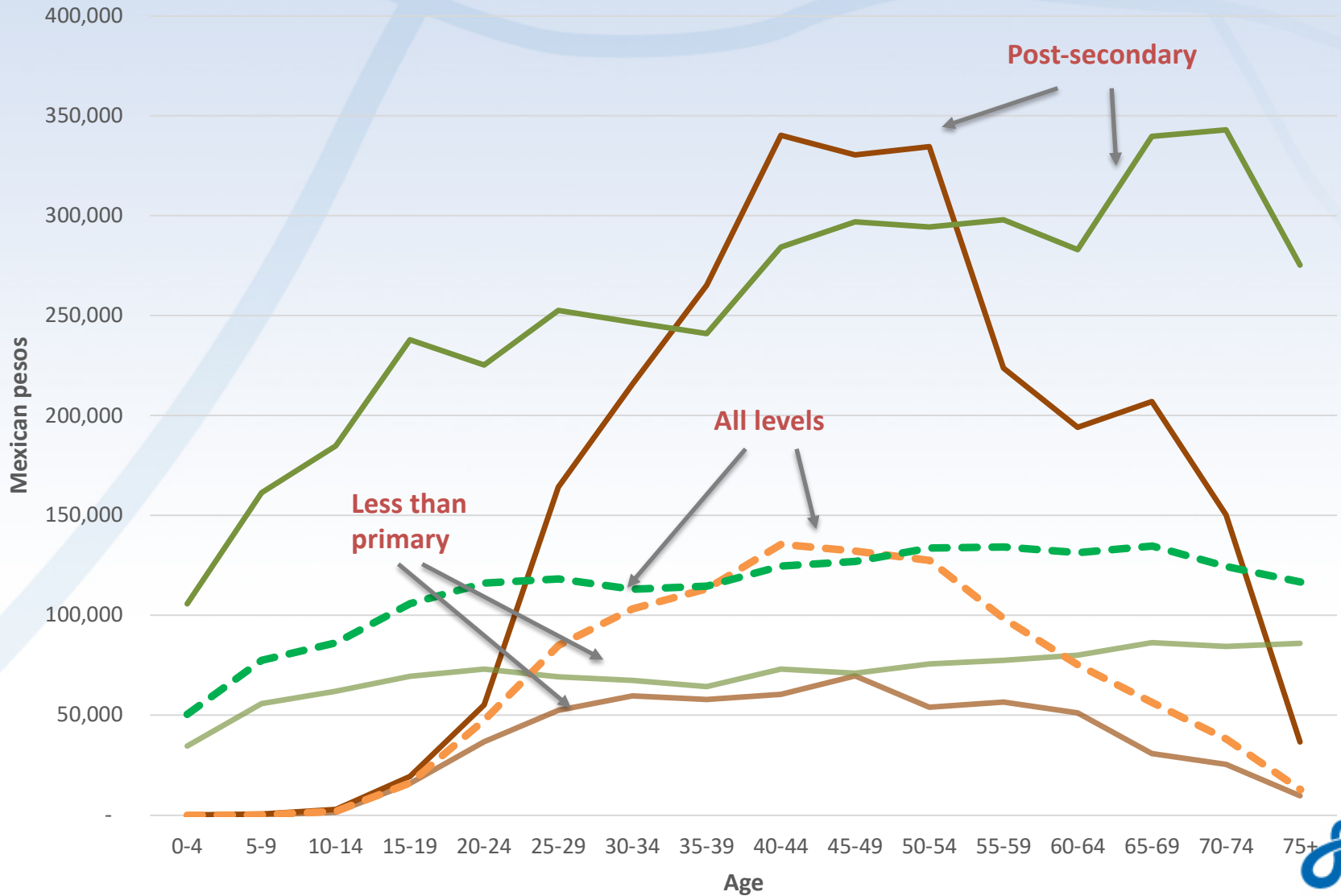
# Life-cycle Deficit by Education of Household Head

Mexico 2014



# Life-cycle Deficit by Education of Household Head

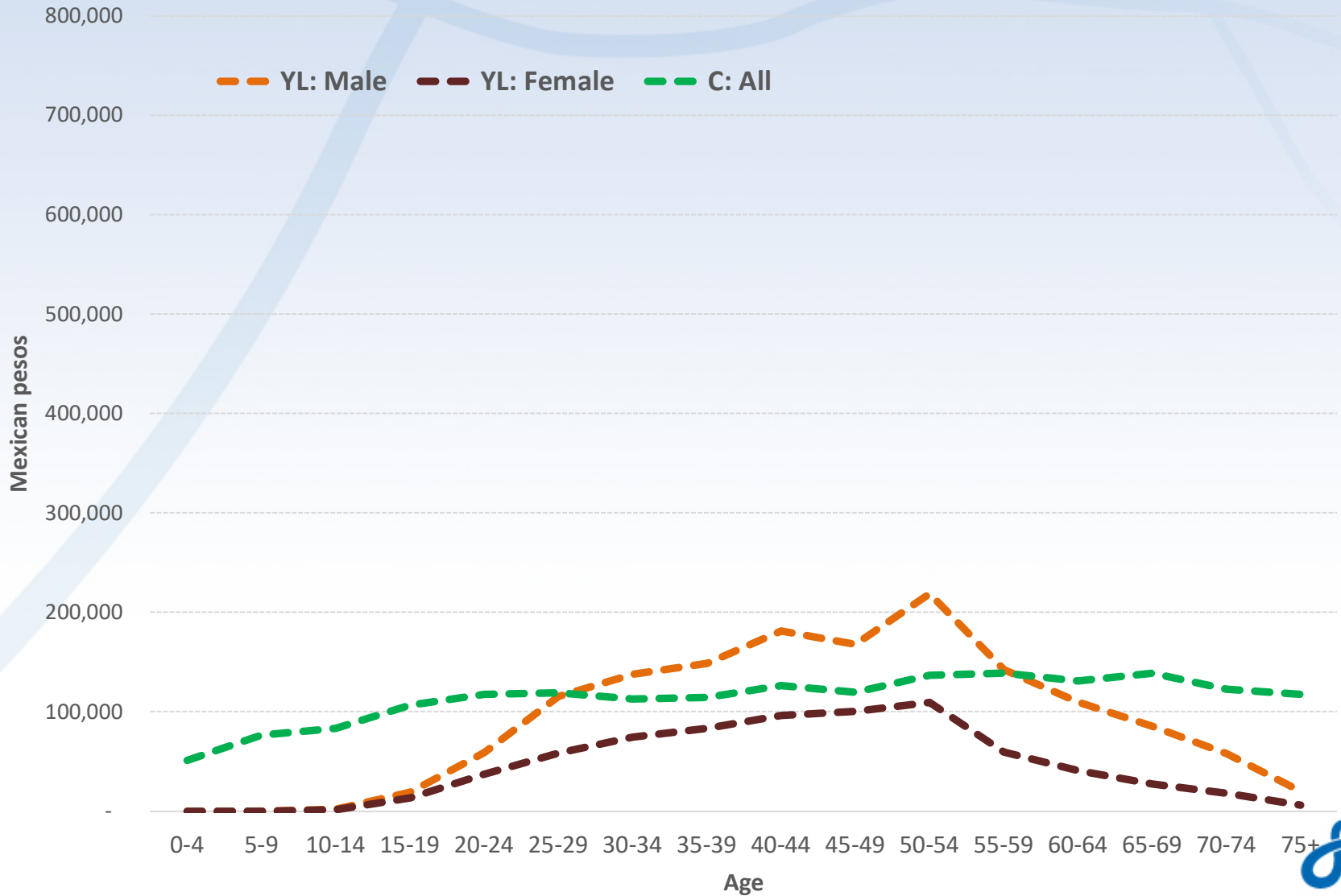
Mexico 2014





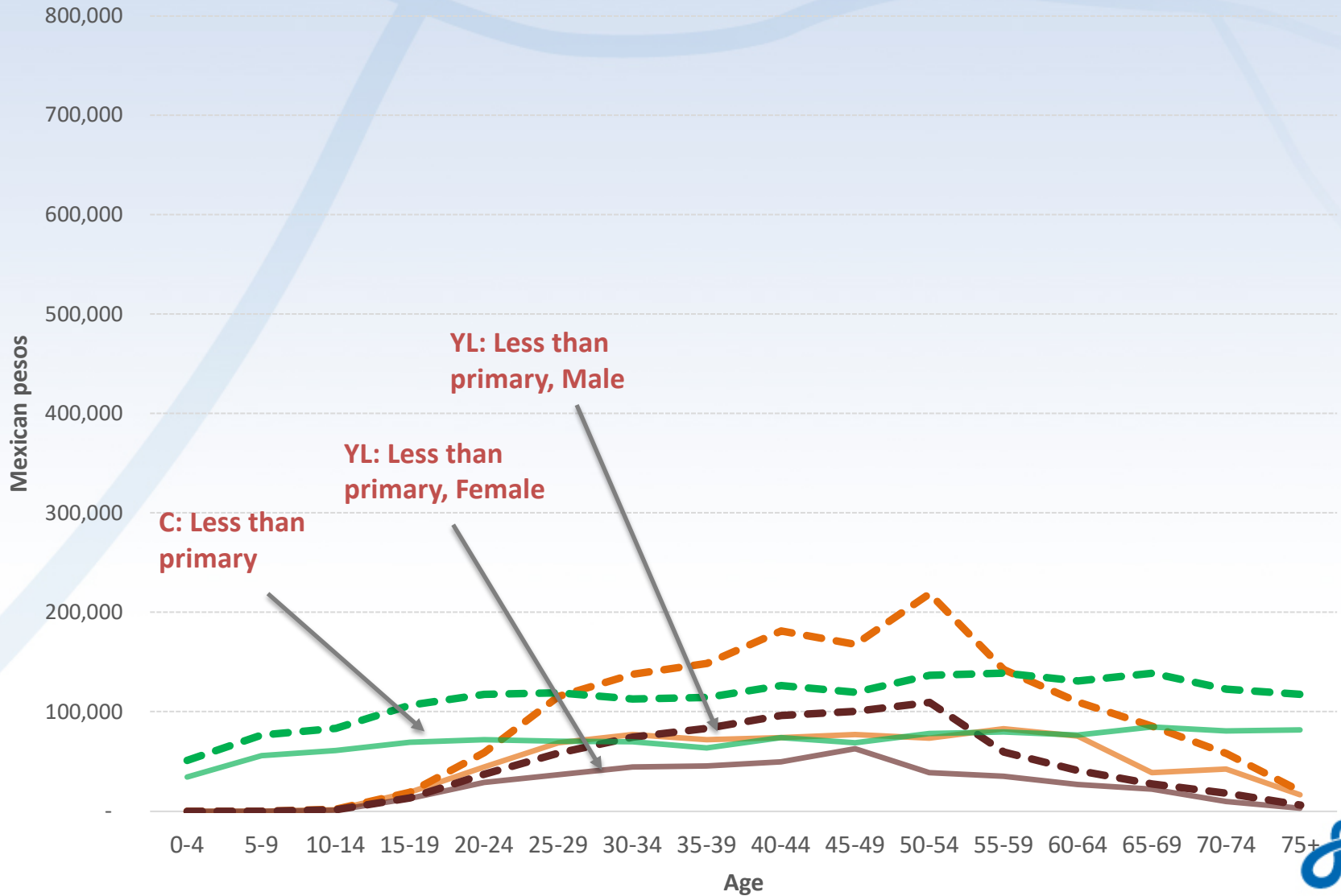
# Life-cycle Deficit by Sex and Education

Mexico, 2014



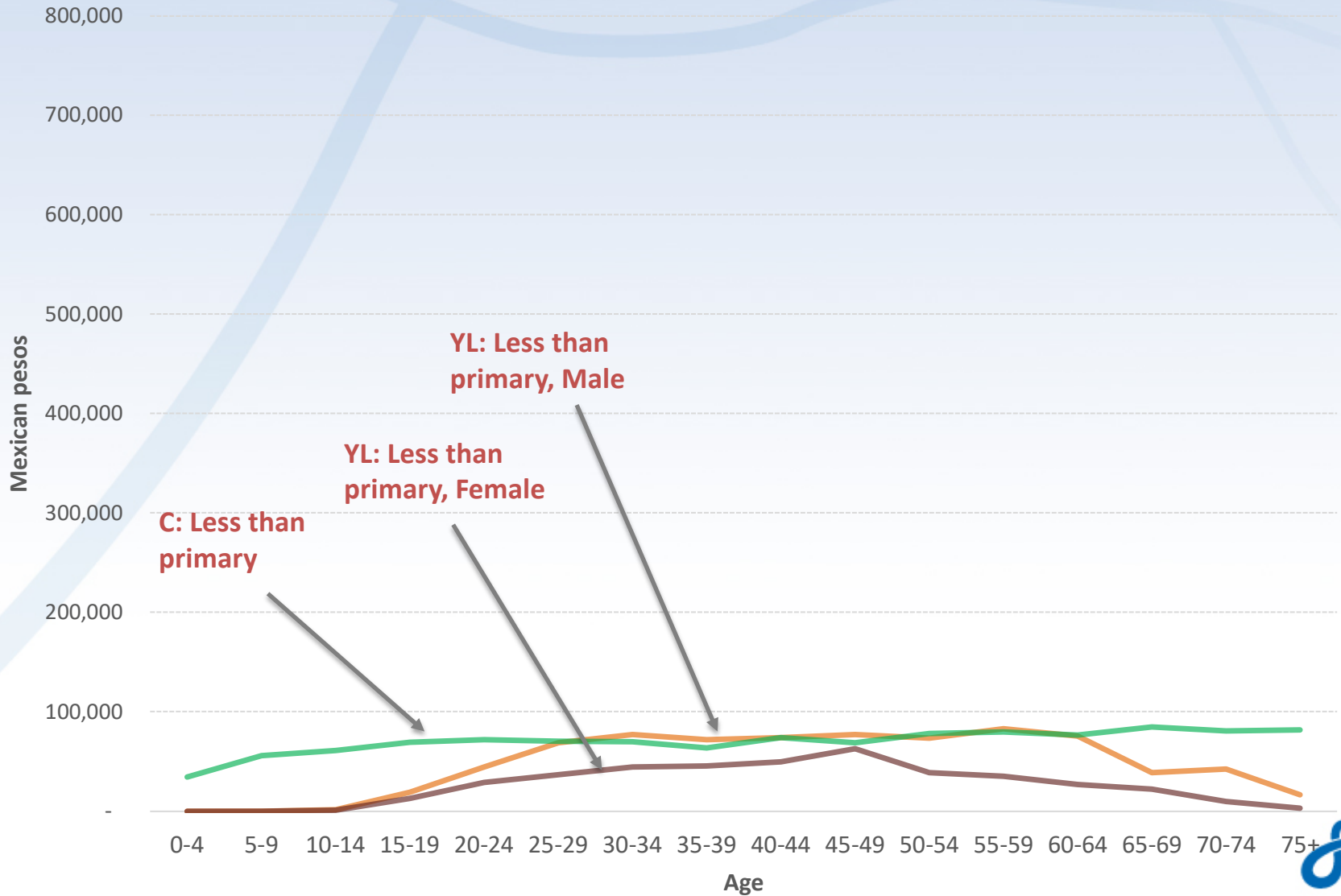
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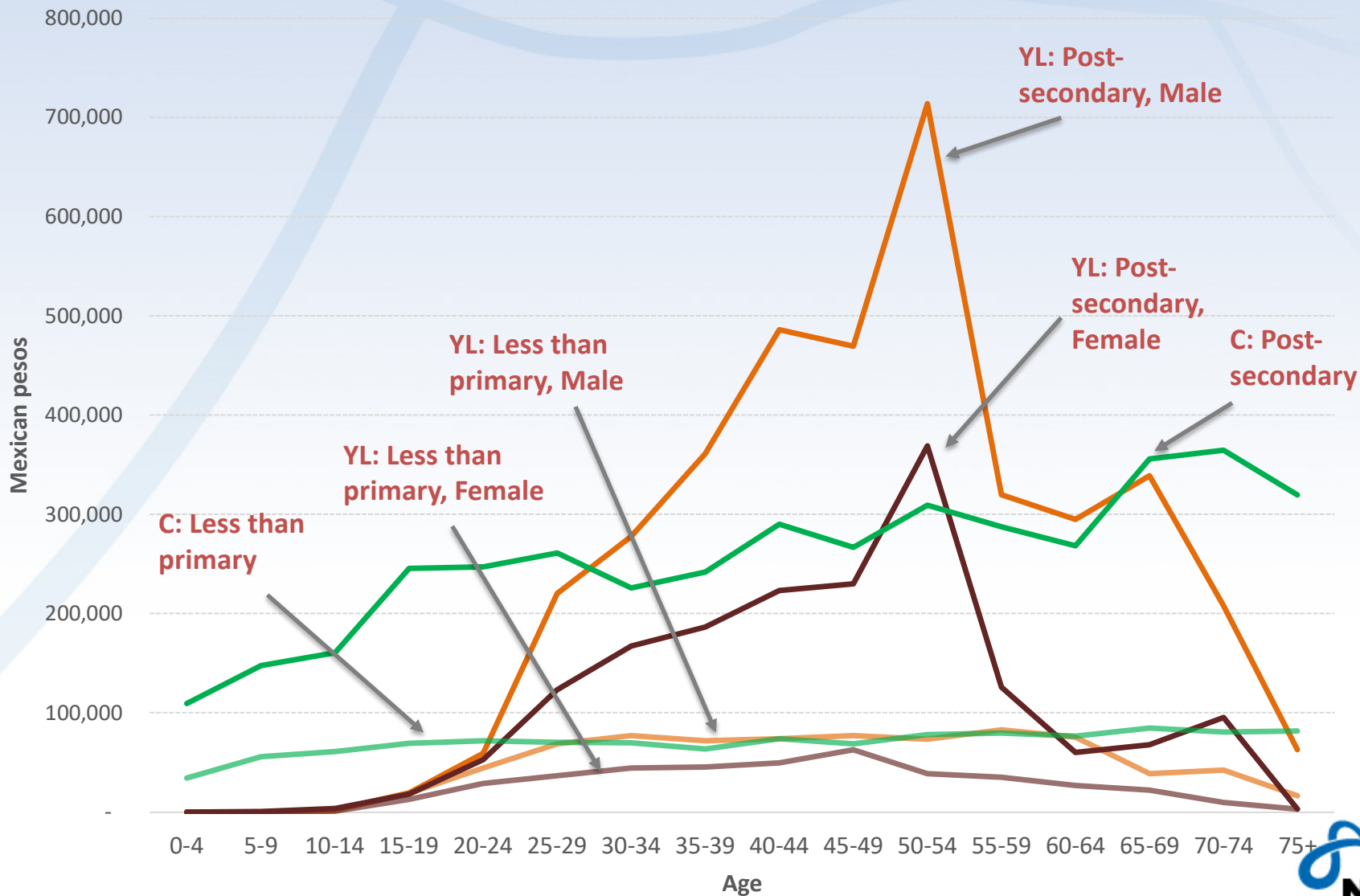
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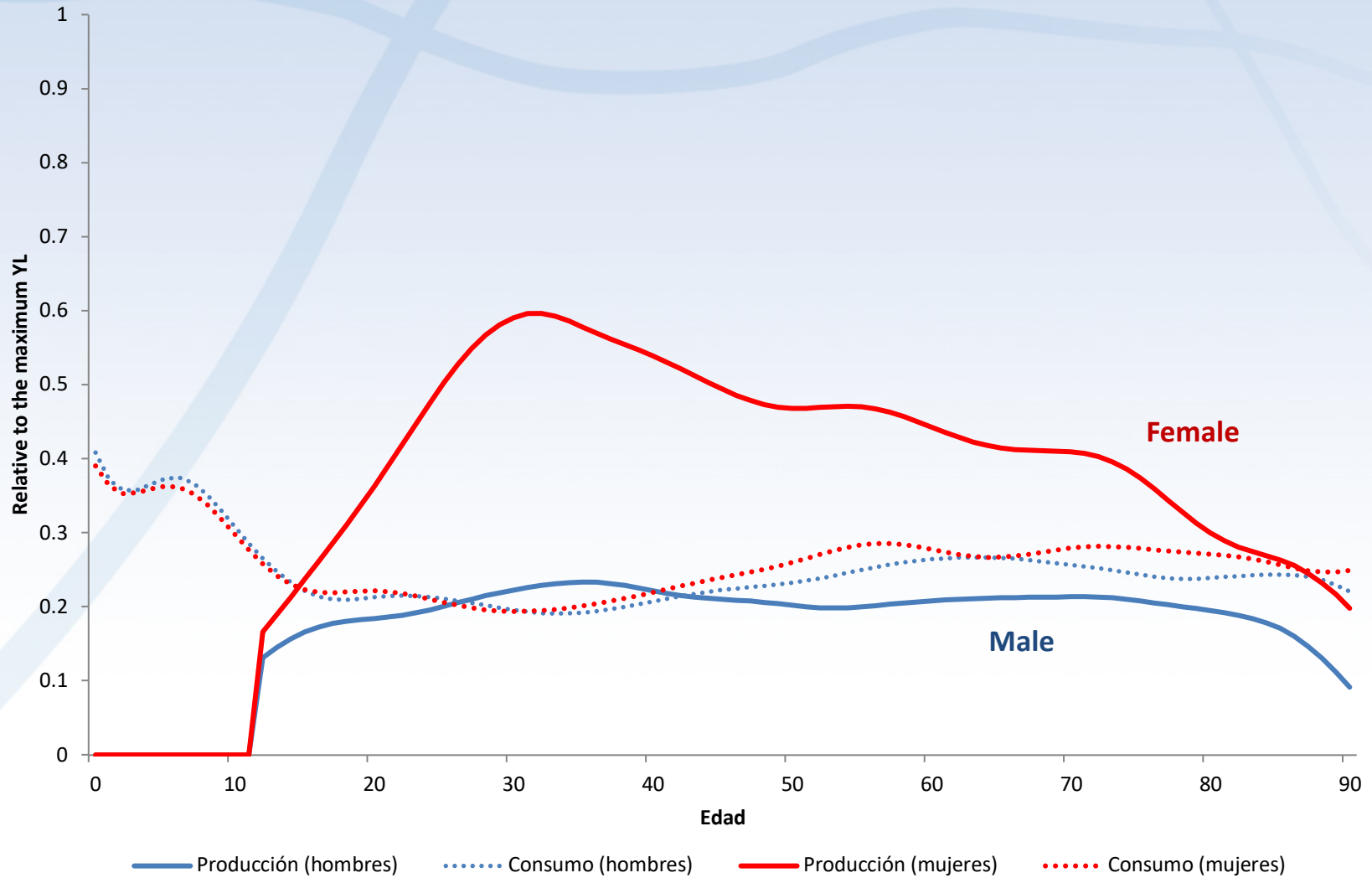


# Life-cycle Deficit by Sex and Education

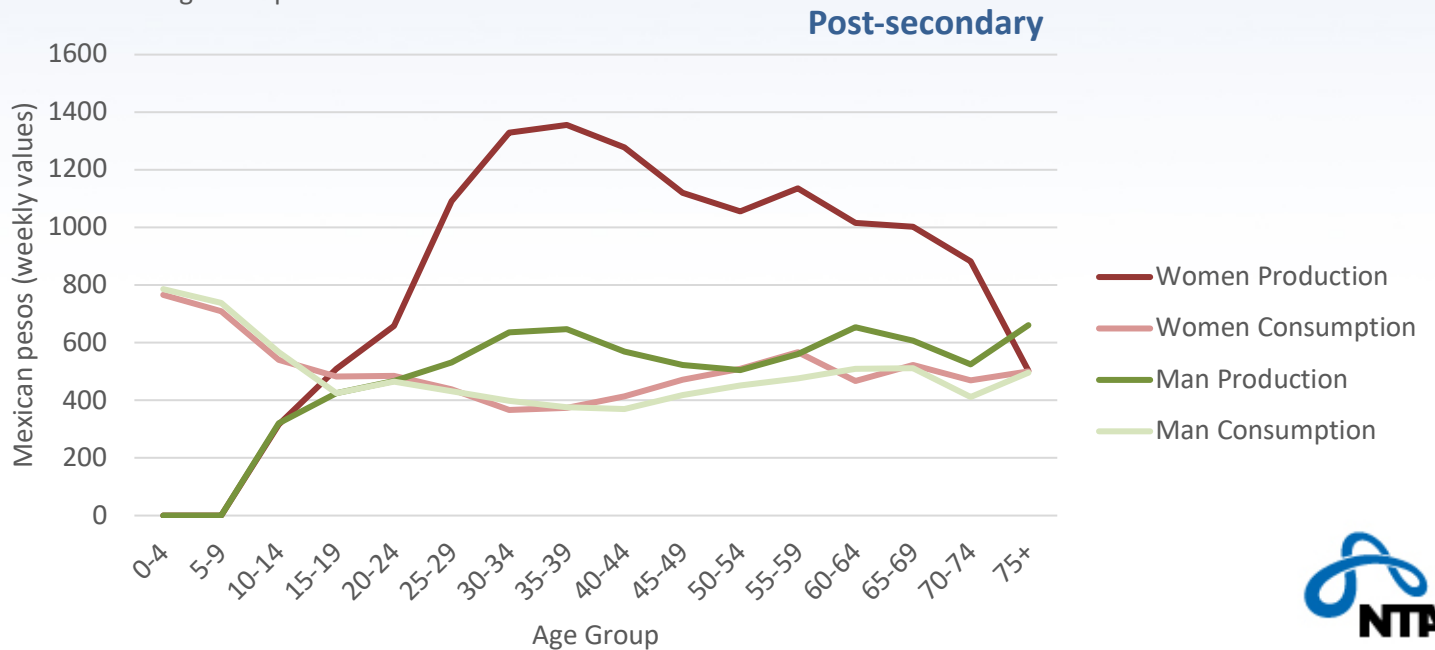
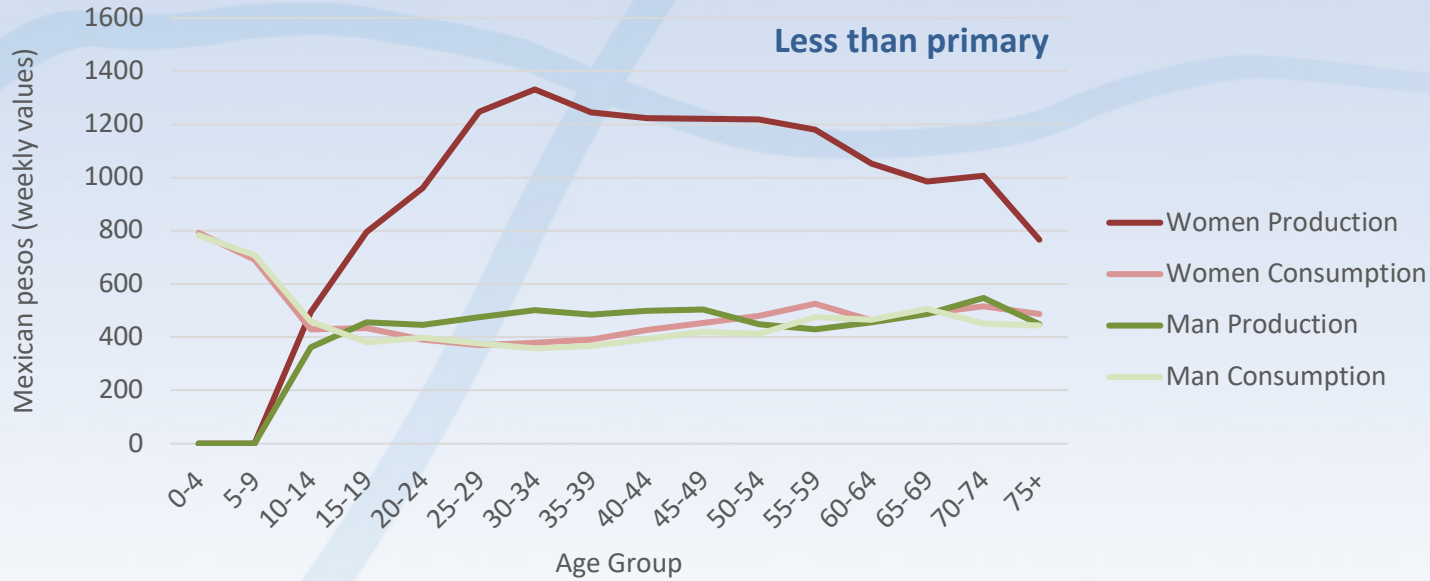
Mexico, 2014



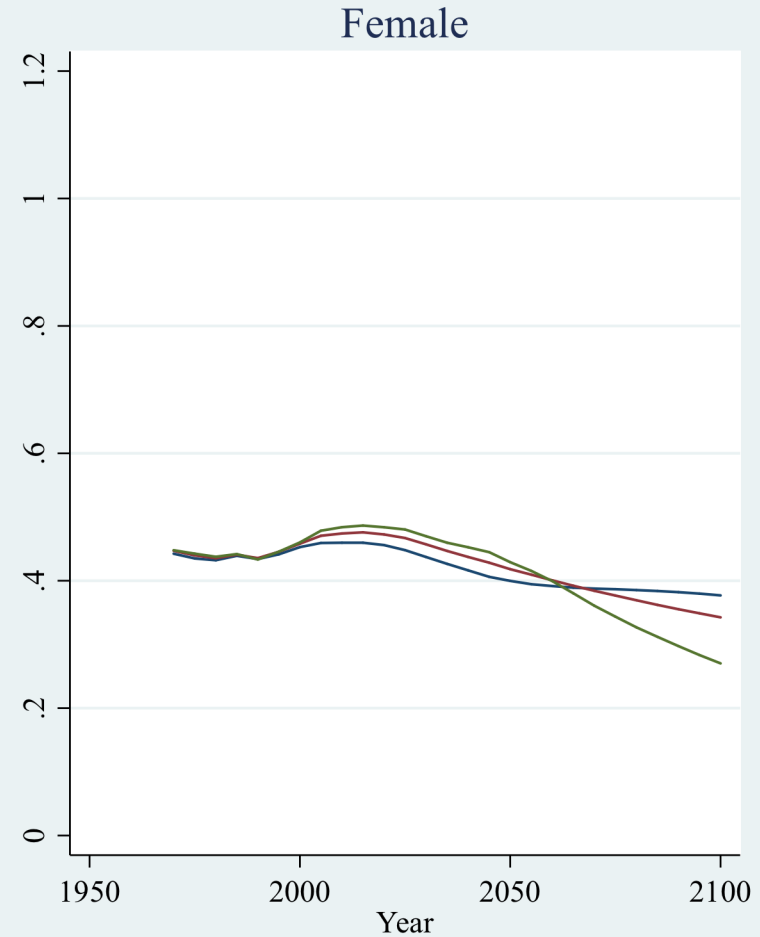
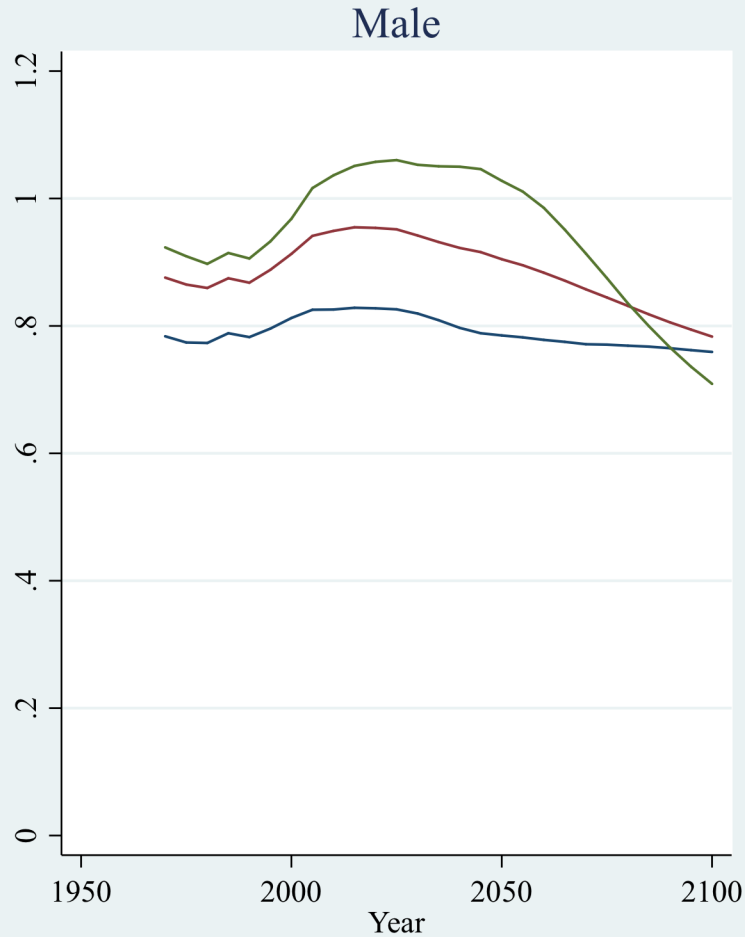
# Production and Consumption in the Home, by Age and Gender, Mexico 2014



# NTTA by Education



# Economic Support Ratio by Sex under Different Scenarios of Education Expansion



# 5. Policy Considerations



# Policy Considerations

- Promote access and quality of education (mostly tertiary)
- Continue addressing the gender gap in employment rates as well as in earnings and the prospective lack or lower pensions for women
- Anticipate a reform in the labor market to improve older workers' incentives to work
- Remove barriers to the entry of younger workers into the job market, particularly women
- Low female employment is typically due to a combination of cultural and policy-related factors
  - Changes in social attitudes toward housework and carework