

**University of New Mexico  
Geospatial and Population Studies**



# NM Population Estimates and Projections

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# Outline

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## Population Estimates

Background

Where you can find estimates

2022 Estimates

Statewide Trends



## Population Projections

Background

2020 Projections

# Population Estimates

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*Observations* about current or past populations



Inexpensive updates to costly census counts



Methods are well-established with known biases



Produced by the US Census Bureau, state and local agencies and private sector

# U.S. Census Bureau Estimates

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- Produced yearly – the year that they are produced is referred to as the “Vintage”
  - Revise prior year estimates for decade each year
- National, State, Counties, City, some Towns
- Cohort-Component Method
  - $Pop_{2021} = Pop_{2010} + Births - Deaths + In\ Migration - Out\ Migration$
- [https://data.census.gov/cedsci/table?q=population%20estimates&tid=PEPPOP2021.NST\\_EST2021\\_POP](https://data.census.gov/cedsci/table?q=population%20estimates&tid=PEPPOP2021.NST_EST2021_POP)
- Not all Population Estimate geographies are available on data.census.gov

# U.S. Census Bureau Estimates

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- Can be useful to use the Census Bureau's website to find data and methodology information
- Census.gov -> topics -> [population estimates](#) ->
  - → Population and housing unit estimates datasets (CSV file with characteristics for those wanting to use data in statistical software)
  - → Population and Housing Unit Estimate Tables (XLS, CVS, PDF of predefined subsets – i.e. city/towns by sex)
  - Can also find errata, data tools, and a link to the “Special Tabulations Program” though which specific tabulations can be requested that are not already publicly released.

# U.S. Census Bureau Estimates

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- Guidance for Data Users

- Explanation of types of estimates, how to use csv files, currently released data and when next release will occur

- Technical Documentation

- Includes file layout pdfs (*example to right*)– these are useful for making sure you know what the variables mean, what variables are available, and
- Methodology – answers any questions you may have about what data is used for estimates, any adjustments made (such as for COVID), or changes to methodology

C-EST2021-ALLDATA-[ST-FIPS]: Annual County Resident Population, Sex, Race, and Hispanic Origin: April 1, 2020 to July 1, 2021

File: 7/1/2021 County Characteristics Resident Population I

Source: U.S. Census Bureau, Population Division  
Release Date: June 2022

Sort order of observations: COUNTY, YEAR, and AGEGRP

Data fields (in order of appearance):

<u>VARIABLE</u>	<u>DESCRIPTION</u>
UMLEV	Geographic Summary Level
STATE	State FIPS code
COUNTY	County FIPS code
STNAME	State Name
COUNTYNAME	County Name
YEAR	Year
AGEGRP	Age group
TOT_POP	Total population
TOT_MALE	Total male population

	US Census Bureau	UNM GPS
Data Sources	Limited to nationally consistent data	State specific
Methods	1	3+
Smallest Geography	City/Town N=138	Census Tract N=499(2010) N= 612 (2020)*
Race Categories	6	4**

## Estimate Source Comparison

\*Estimates will be updated to the 2020 tracts next year

\*\*Race/ethnicity categories will change within the next year



## Cohort-Component

$$Pop_{2017} = Pop_{2010} + Births - Deaths + In Migration - Out Migration$$



## Housing Unit



## Ratio Correlation



## Cohort Change Ratios

# GPS Estimates Methodologies





**NM DOH VITAL  
RECORDS**



**NM MVD DRIVER'S  
LICENSES**



**NM PED SCHOOL  
ENROLLMENT**



**NM SOS VOTER  
REGISTRATIONS**



**CMS MEDICARE  
ENROLLMENT**



**IRS MIGRATION  
FILES**



**RESIDENTIAL  
BUILDING PERMITS**

# Population Estimates Key Input Data

# GPS Estimates Methodology

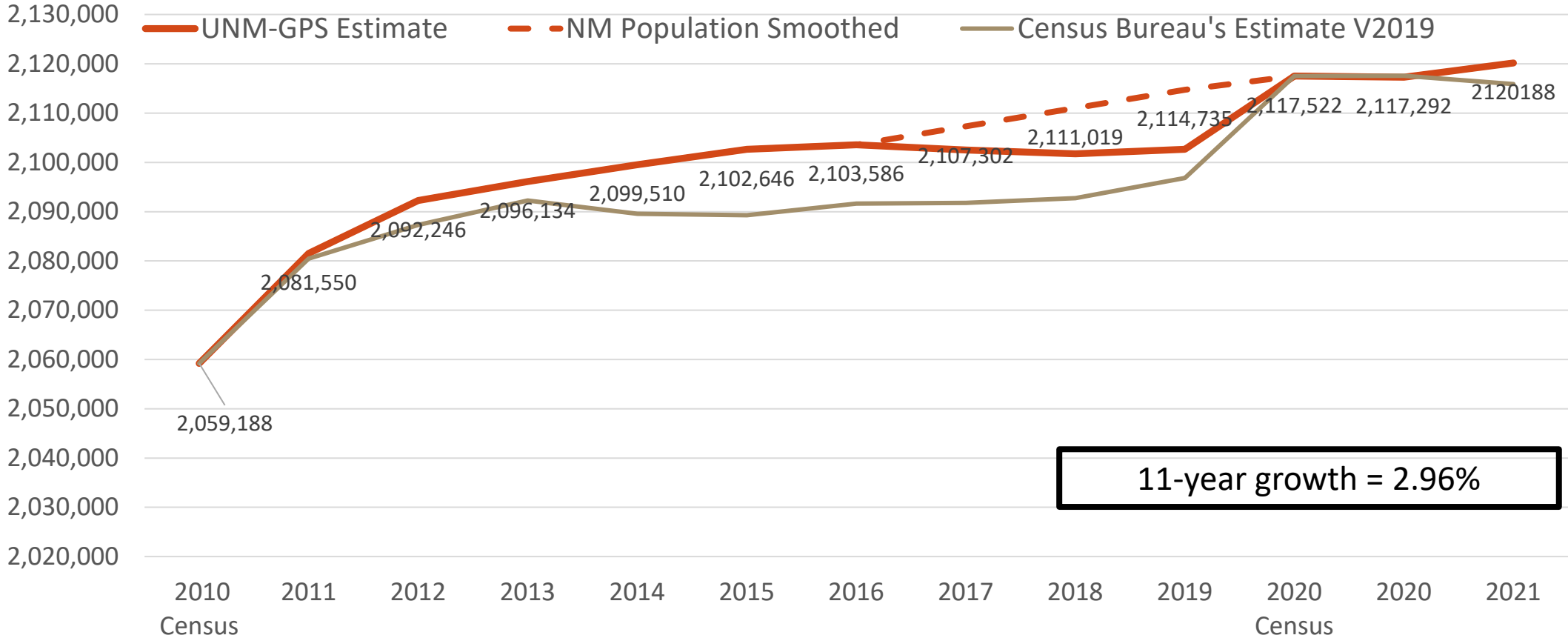
## Key Steps

1. State Total
2. County Totals
3. Census Tract Totals
4. Characteristics  
Age/Sex/Race/Ethnicity
5. Data Fitting

# Factors Influencing Uncertainty and Error in Estimates

- Smaller populations
- Further from the Last Census
- Underrepresented Populations
- On Tribal Lands
- As Populations Change

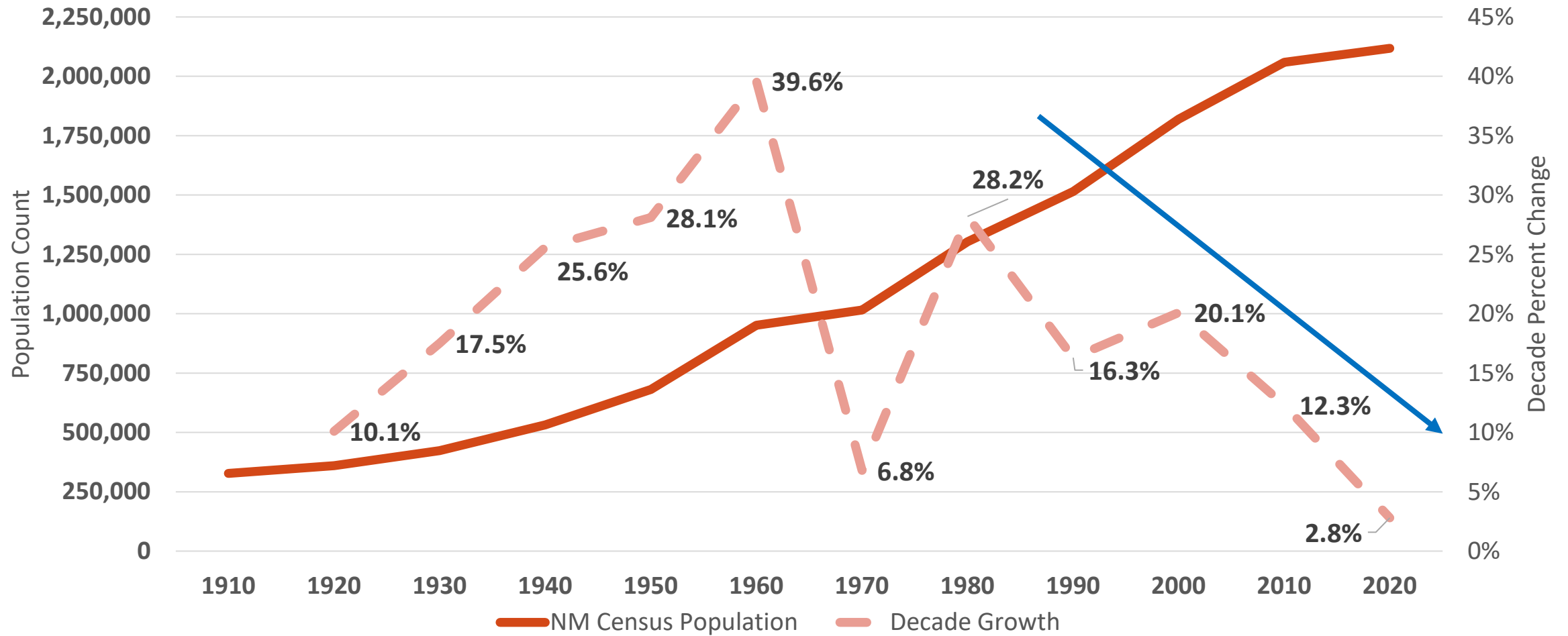
# New Mexico Population Estimates 2010-2021



Source: UNM Geospatial and Population Studies ([gps.unm.edu](https://gps.unm.edu))



# New Mexico Population Growth 1910 - 2020



Source: UNM Geospatial and Population Studies ([gps.unm.edu](https://gps.unm.edu))



Births are Down

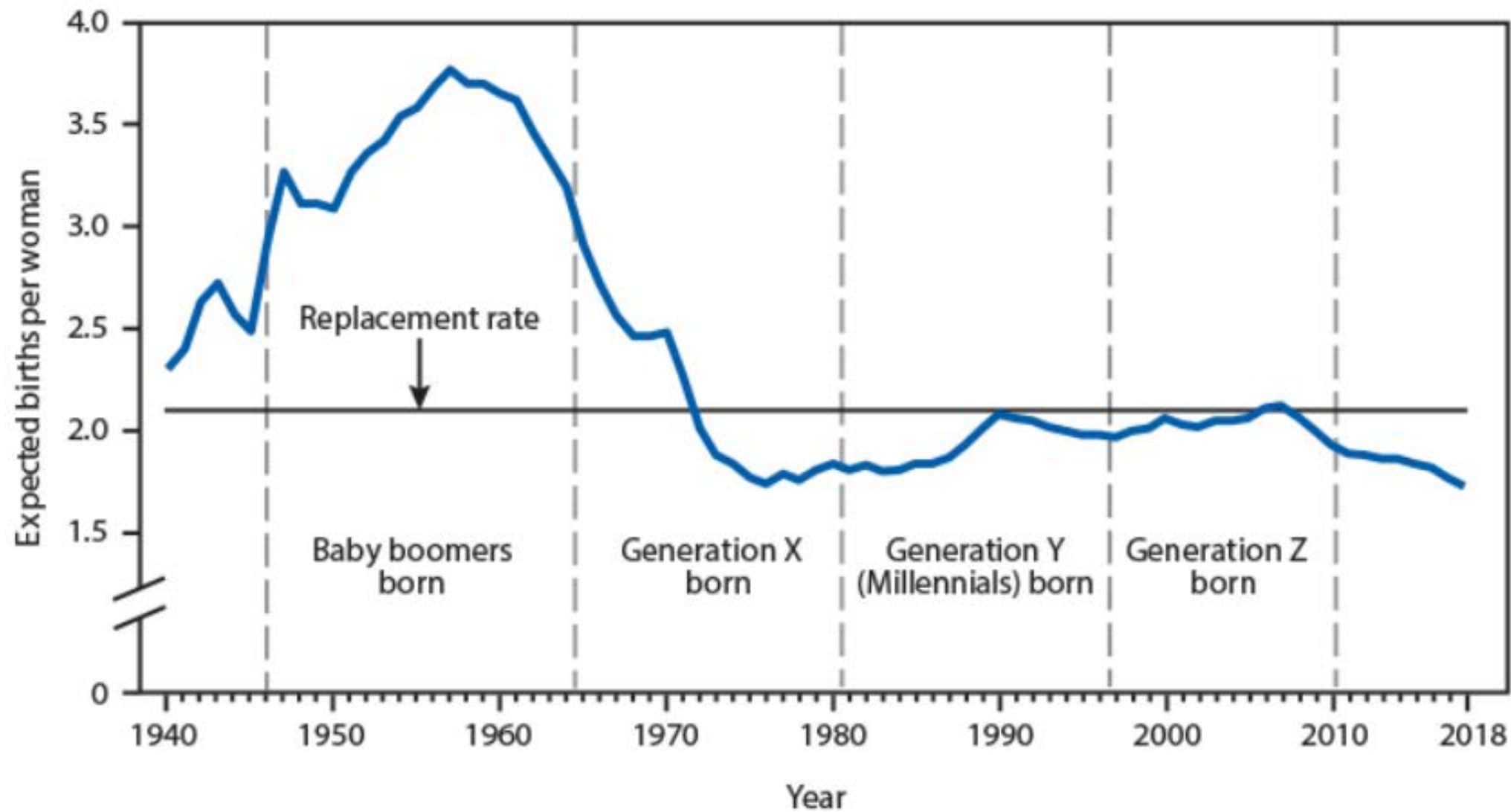


Deaths are Up

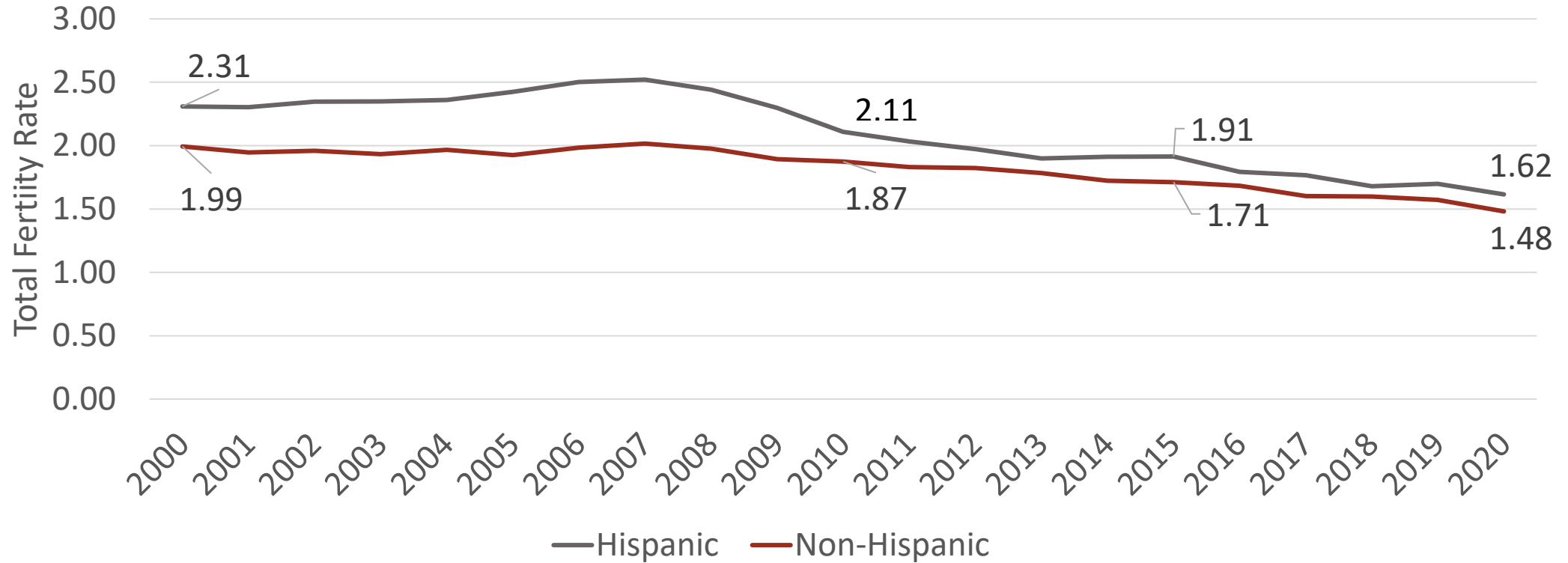


Migration is ... Changing?

# Why Flat Growth?



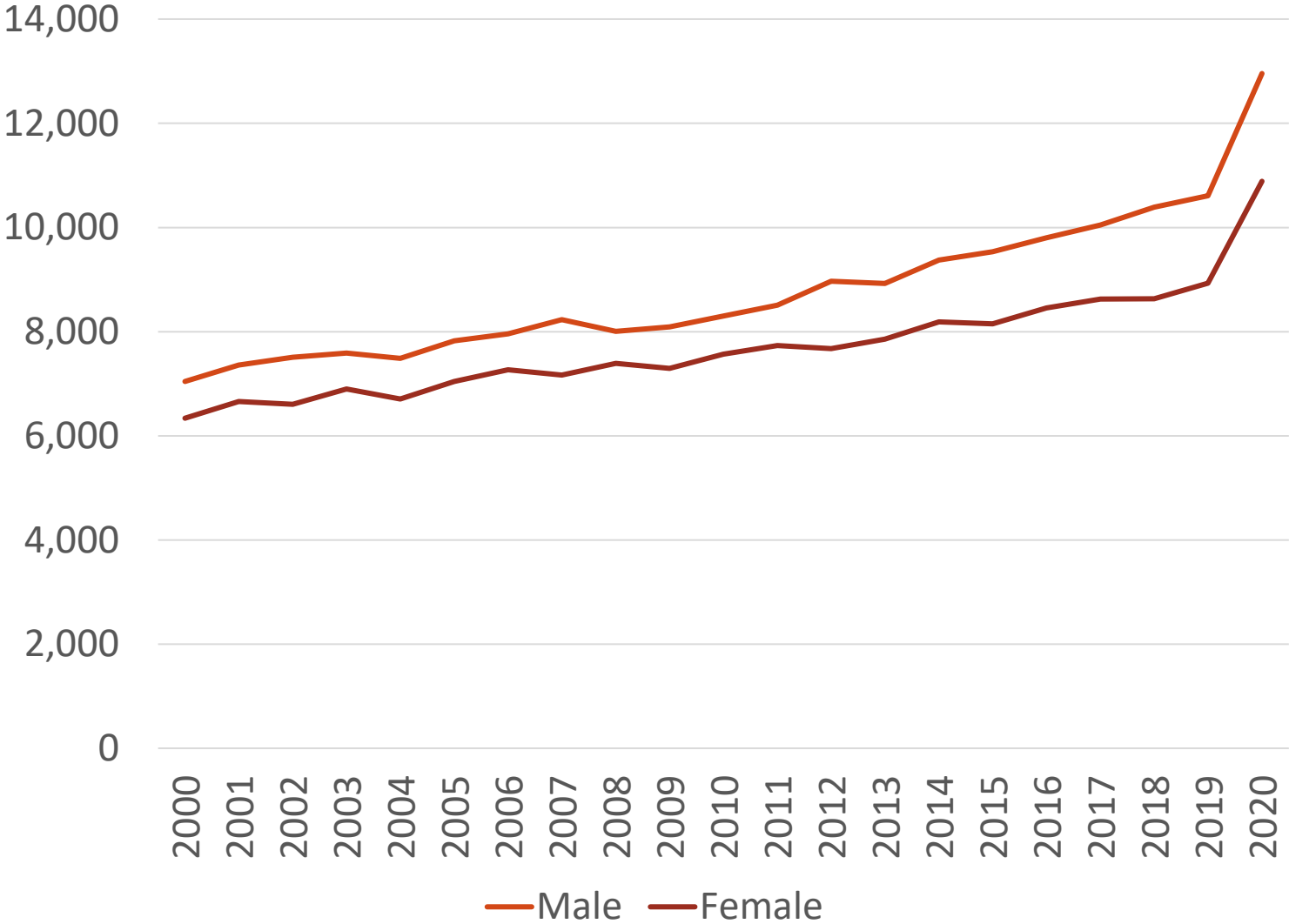
New Mexico TFR, by Hispanic Origin



# Declining Fertility

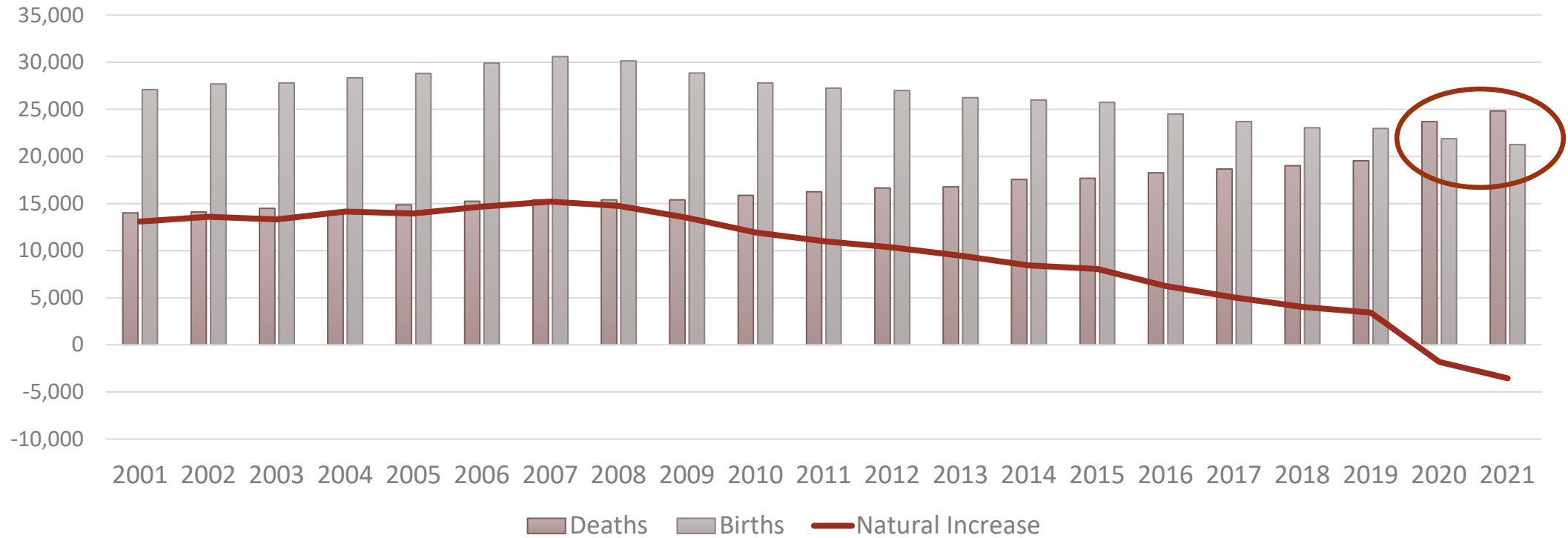


# Mortality



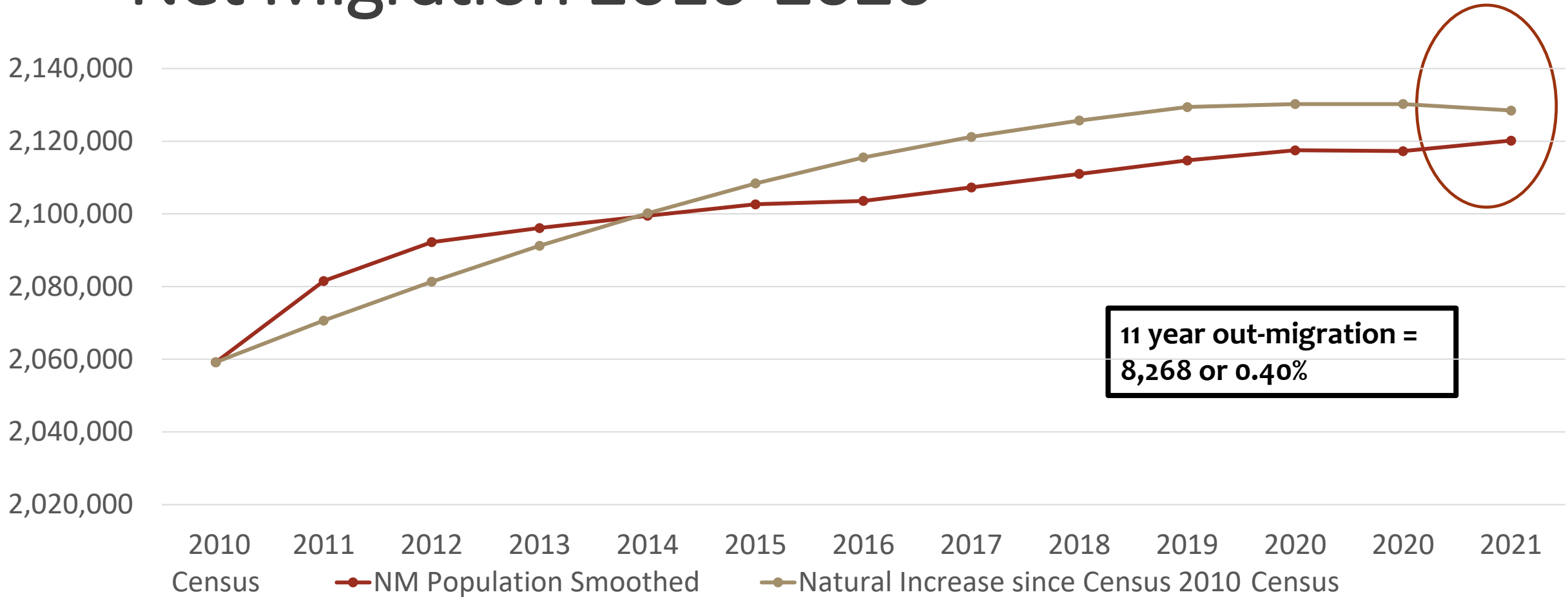
- Total deaths increasing due to aging population
- Mortality rates also increasing slightly
- People are less likely to live long lives if they are poor, get little exercise or lack access to health care (Dwyer-Lindgren, Bertozzi-Villa, Stubbs, et al., 2017).

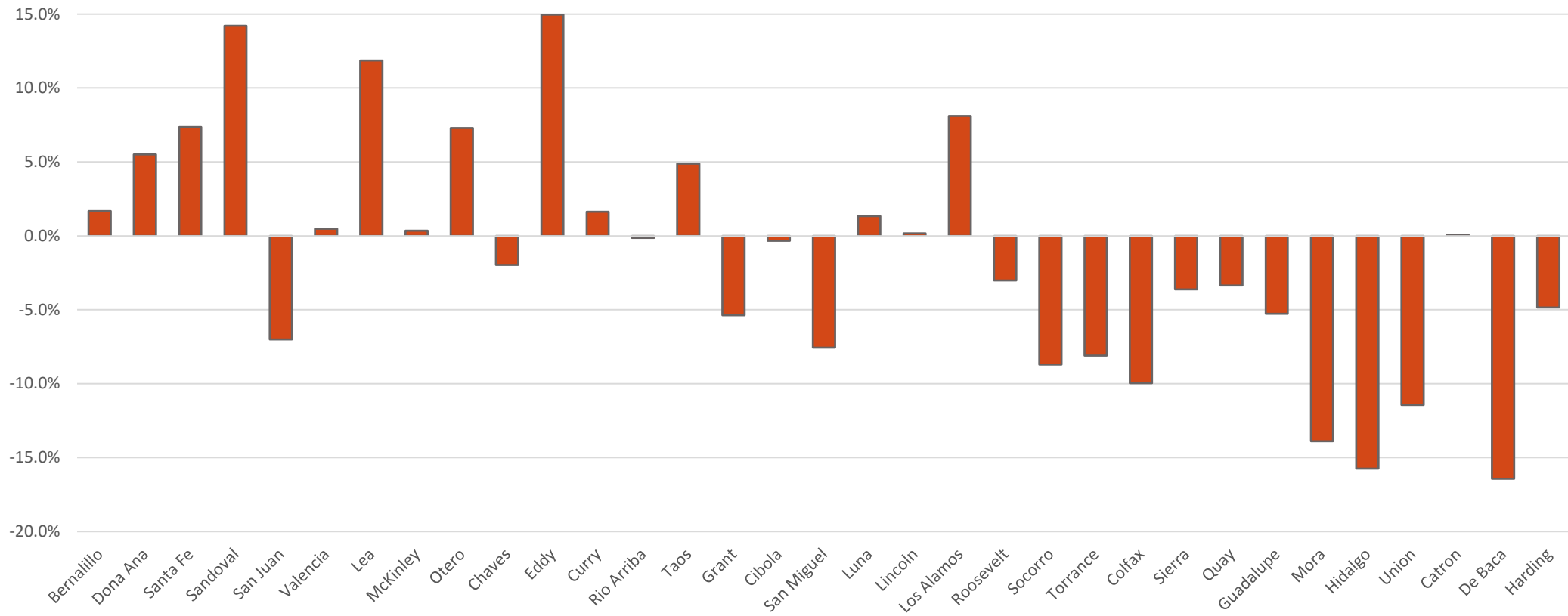
Decline in natural increase since last Decennial Census



# Births, Deaths, and Natural Increase in New Mexico 2001-2020

# Estimate of New Mexico's Net Migration 2010-2020



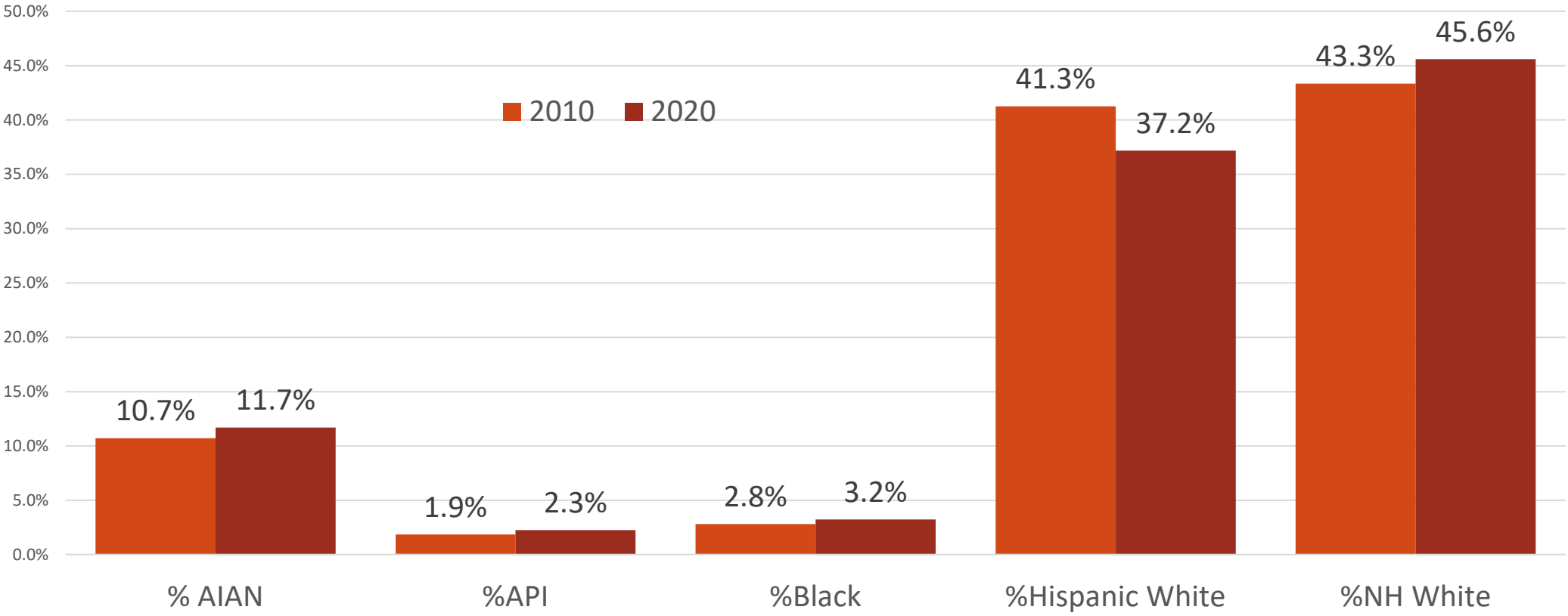


# Population Change by County 2010-2021

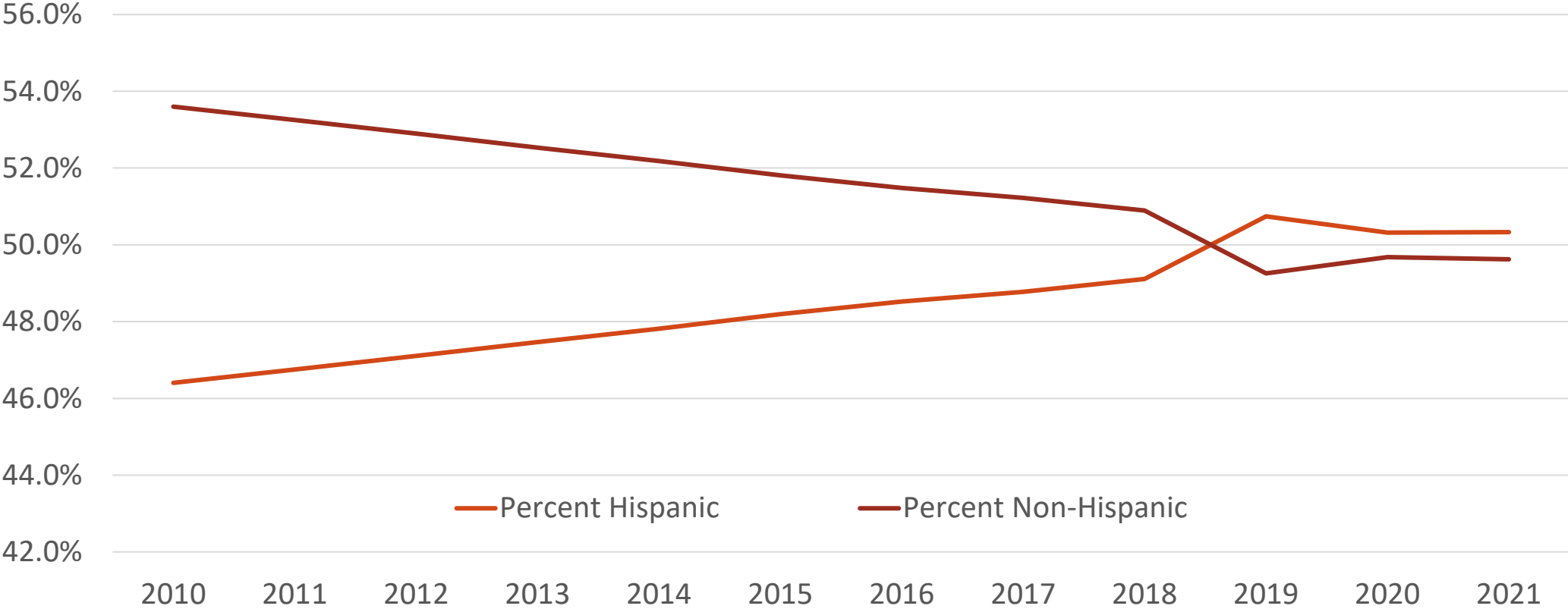
Note: Counties are listed from largest to smallest.

Source: UNM Geospatial and Population Studies ([gps.unm.edu](https://gps.unm.edu))

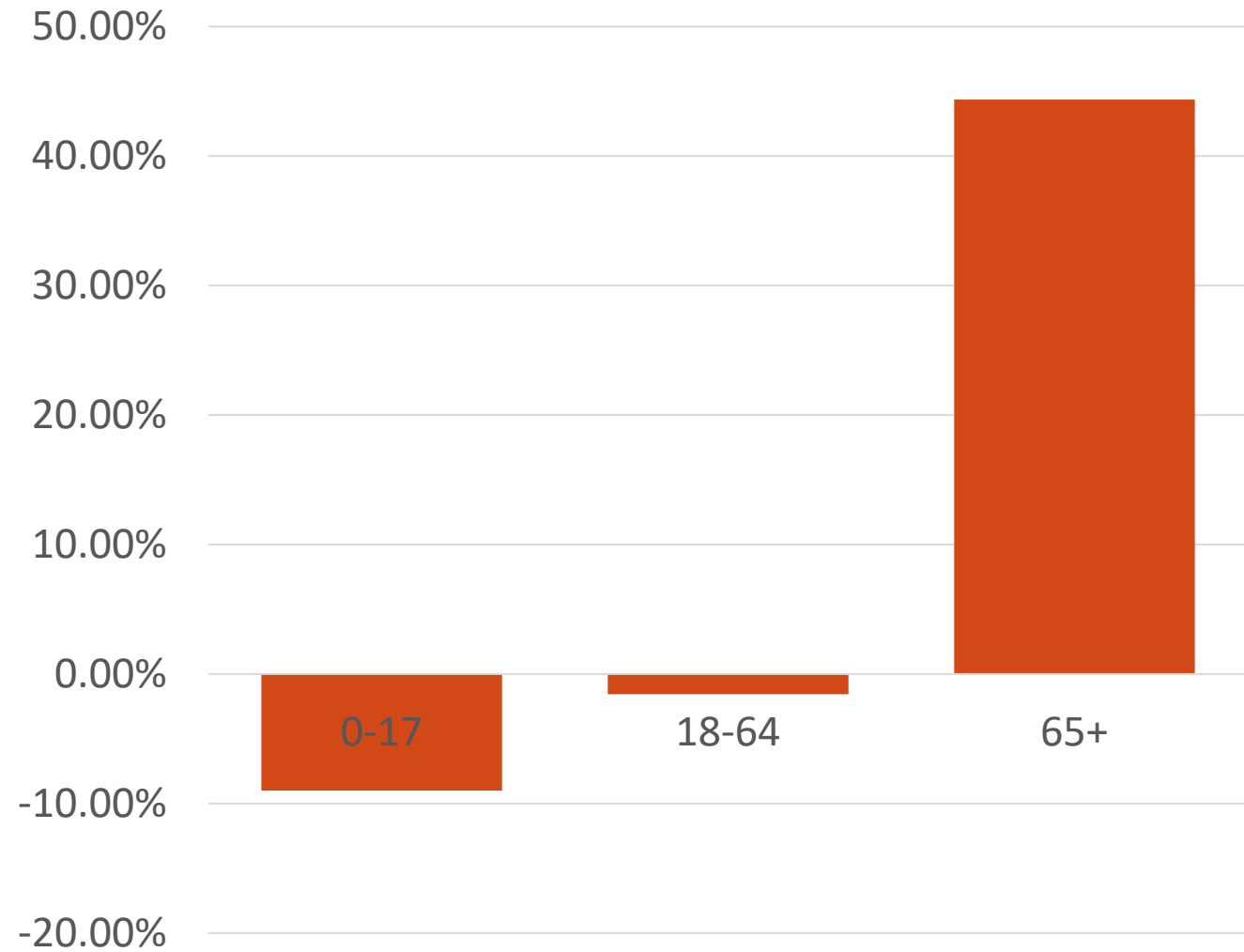
# NM Racial Composition 2021



# Percent Hispanic, 2010 - 2021

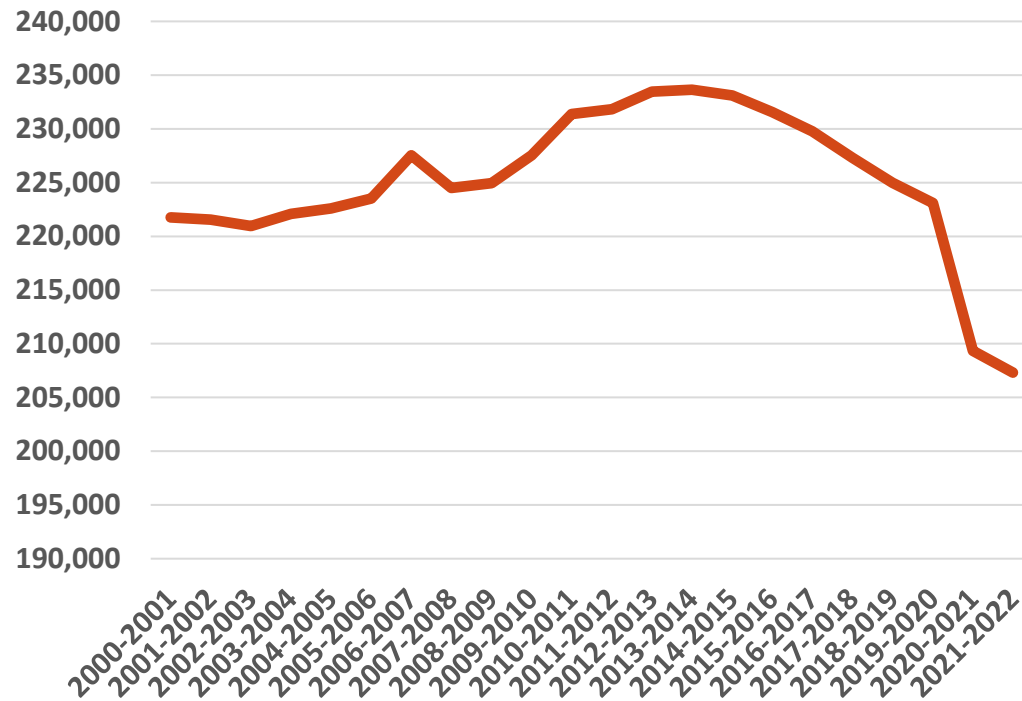


# Growth By Age, 2010 to 2021

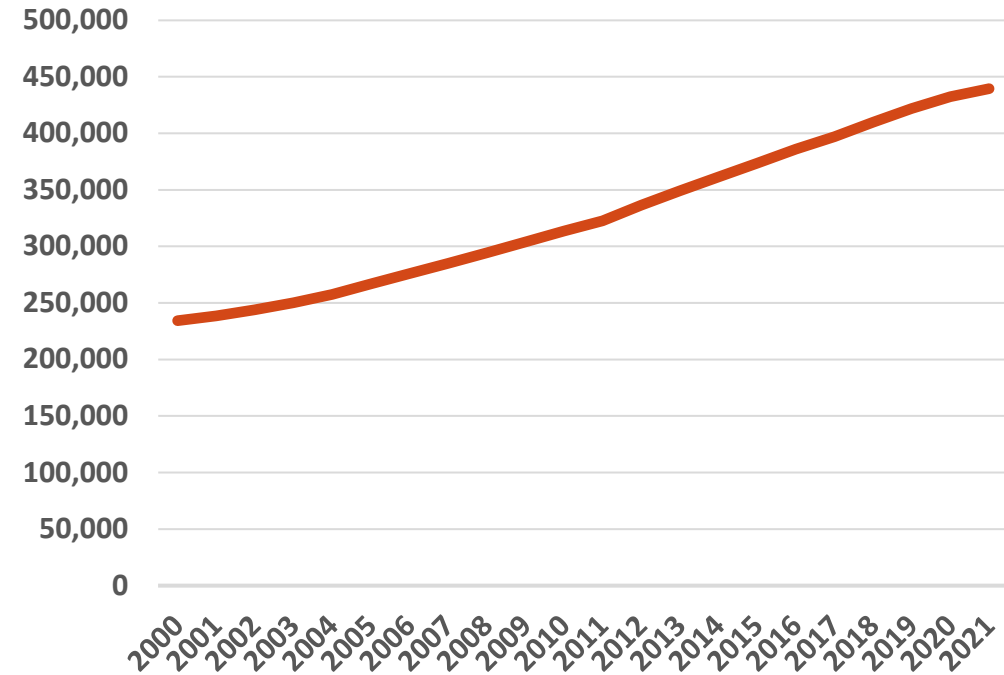


# New Mexico's Aging Population

## K- 8 SCHOOL ENROLLMENT



## MEDICARE ENROLLMENT



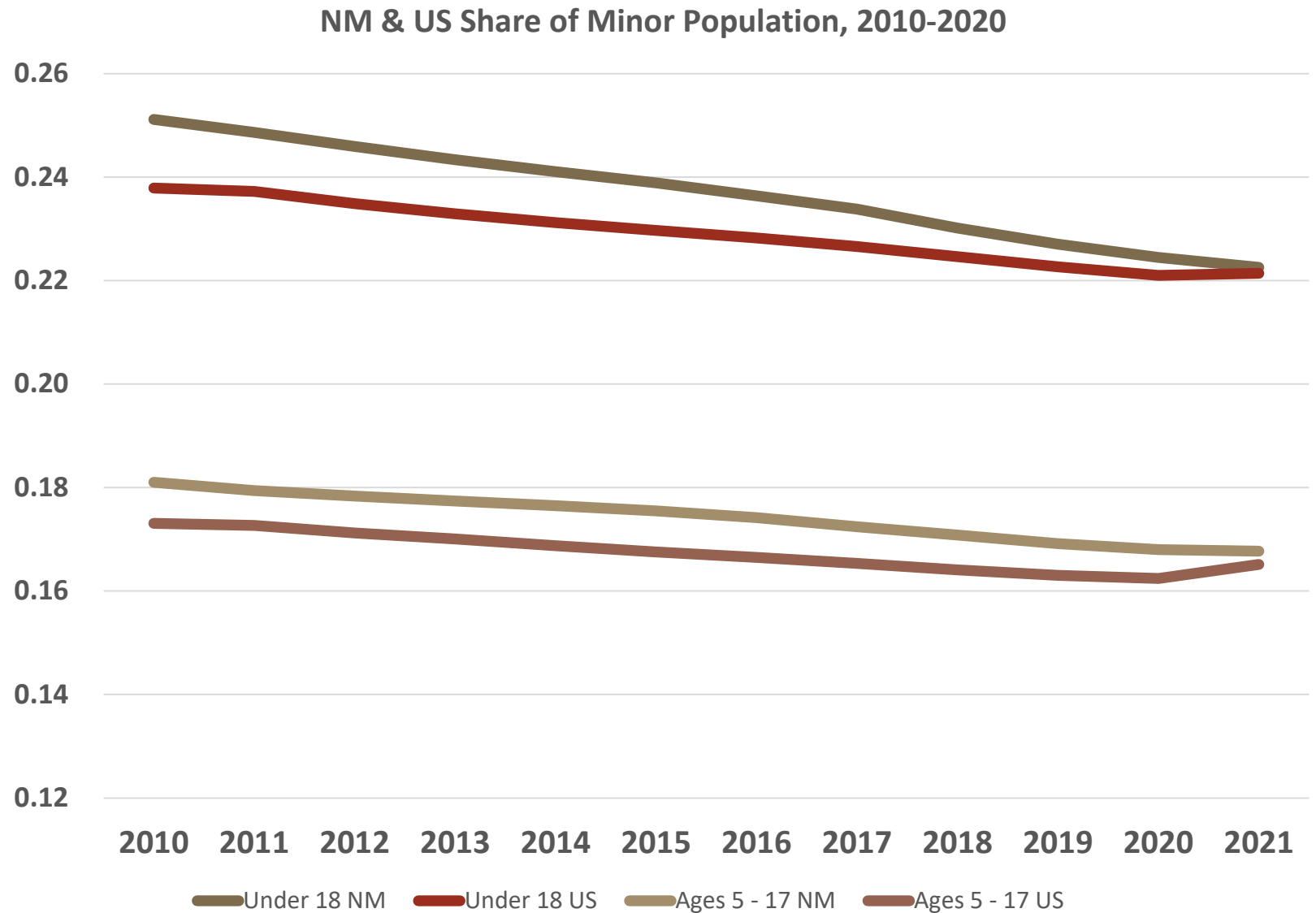
**Sources:** NM Public Education Department, School Enrollment Data  
Medicare Enrollment, data.CMS.gov



# Share of NM Population Under 18 2010-2021

Sources: UNM Geospatial and  
Population Studies ([gps.unm.edu](http://gps.unm.edu));

U.S. Census Bureau Annual Estimates of  
the Resident Population by Single Year  
of Age and Sex for the United States:  
April 1, 2010 to July 1, 2021



# Population Projections: Cohort Component Method

$$Pop_{n+x} = Pop_n + Births - Deaths + Net Migration$$

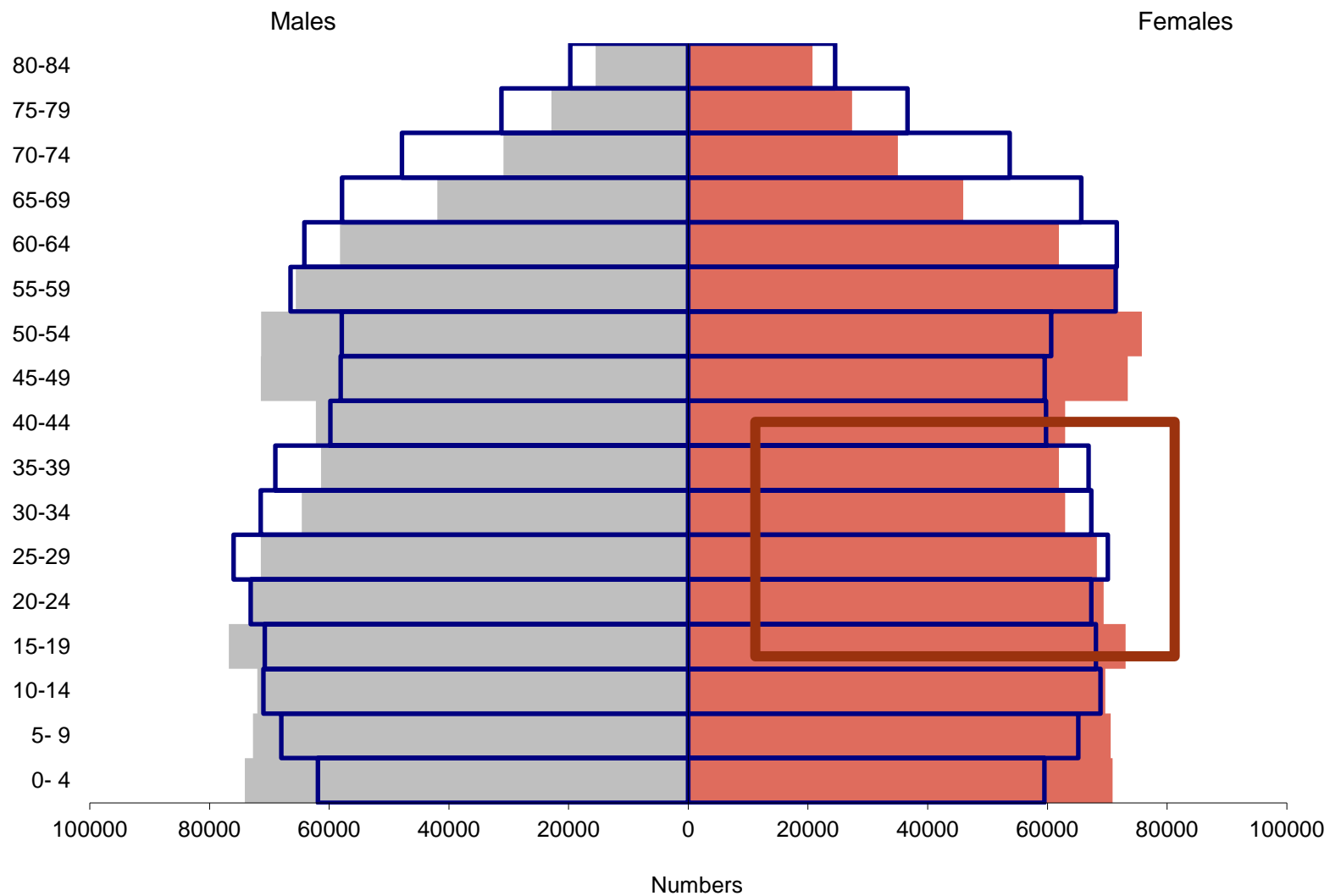
Population Size and Age Structure

Fertility Trends

Mortality Trends

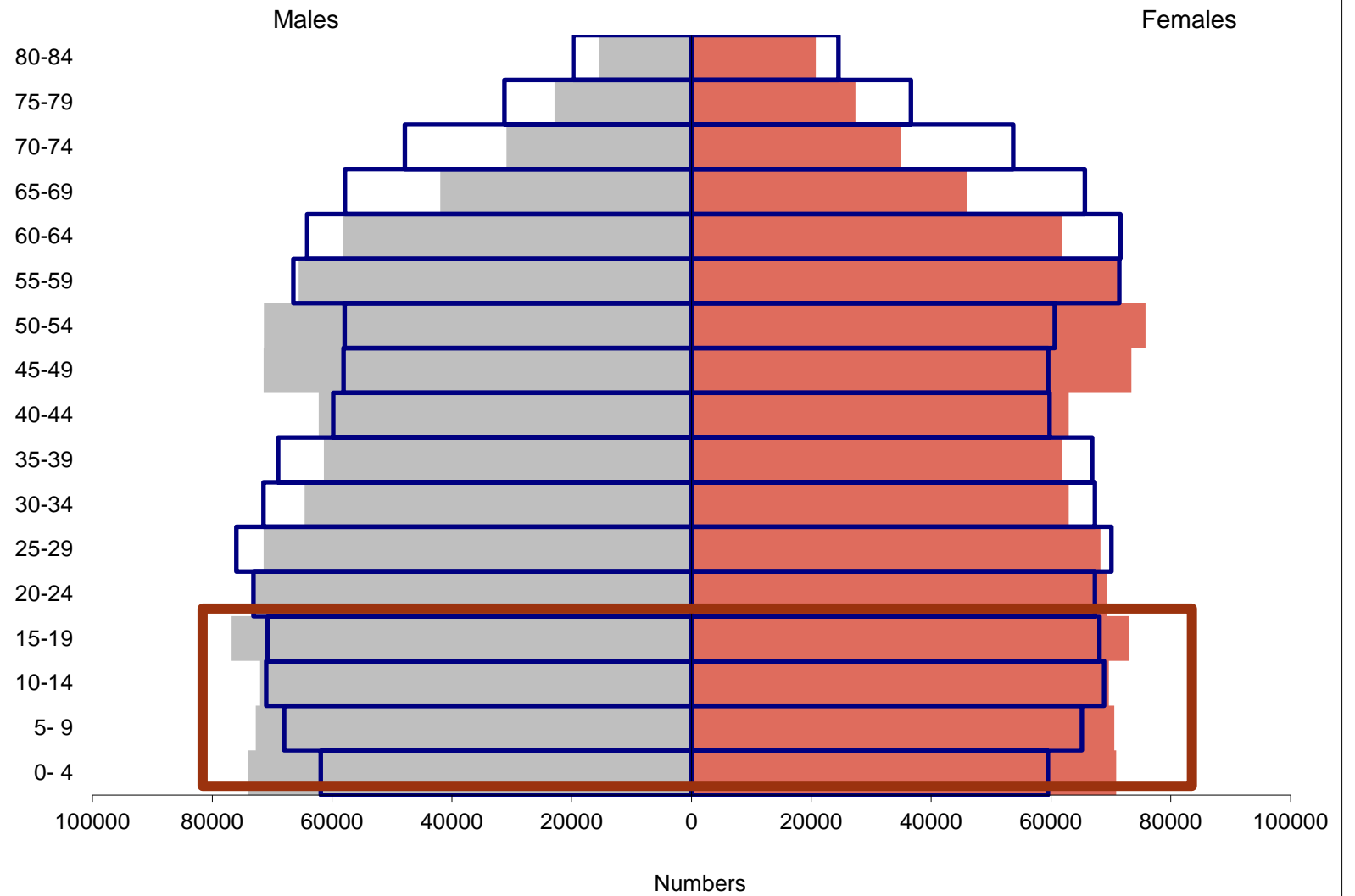
Migration Trends

### New Mexico 2010 (shaded) & New Mexico 2019



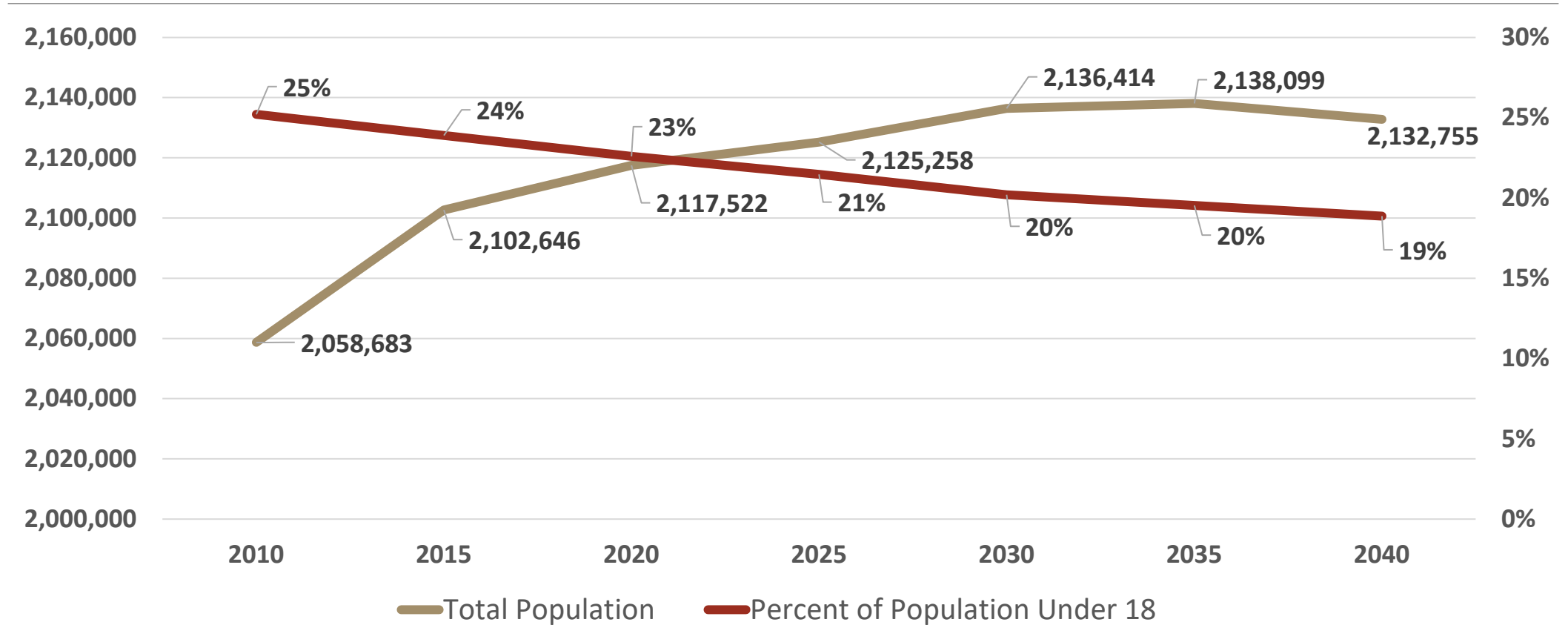
Changing Age Structure

### New Mexico 2010 (shaded) & New Mexico 2019



Changing Age Structure

# Projected New Mexico Population



Source: UNM Geospatial and Population Studies ([gps.unm.edu](http://gps.unm.edu))



## Fertility

*Will fertility continue to decline as it has been? Will it begin to rise, or will it remain stable?*

- **Assumption:** Fertility will continue to decline for Hispanic women, bring the overall state fertility rate down to the current rate for non-Hispanic women



## Mortality

Life expectancy has increased for much of the past century but has been fairly stable in recent years.

- *Will we continue to live longer, or will poorer health behaviors lead to shorter lives?*
- **Assumption:** Mortality will remain at current rates

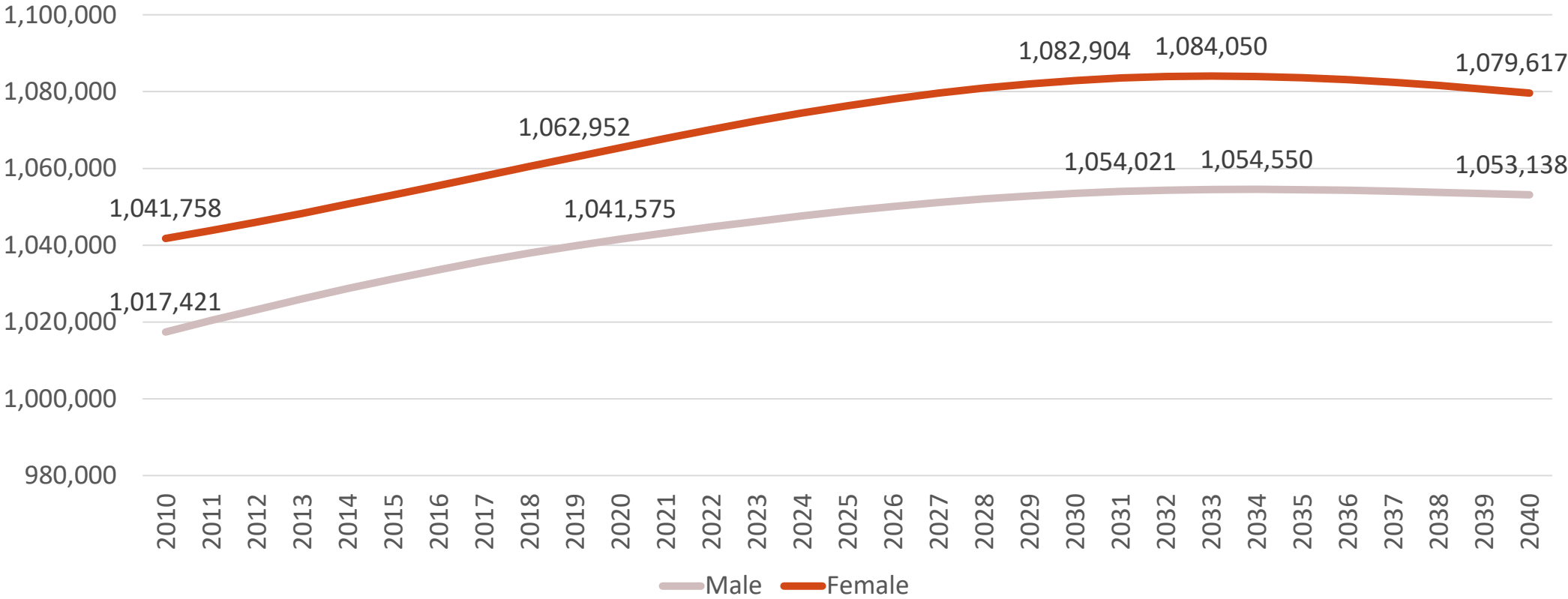


## Migration

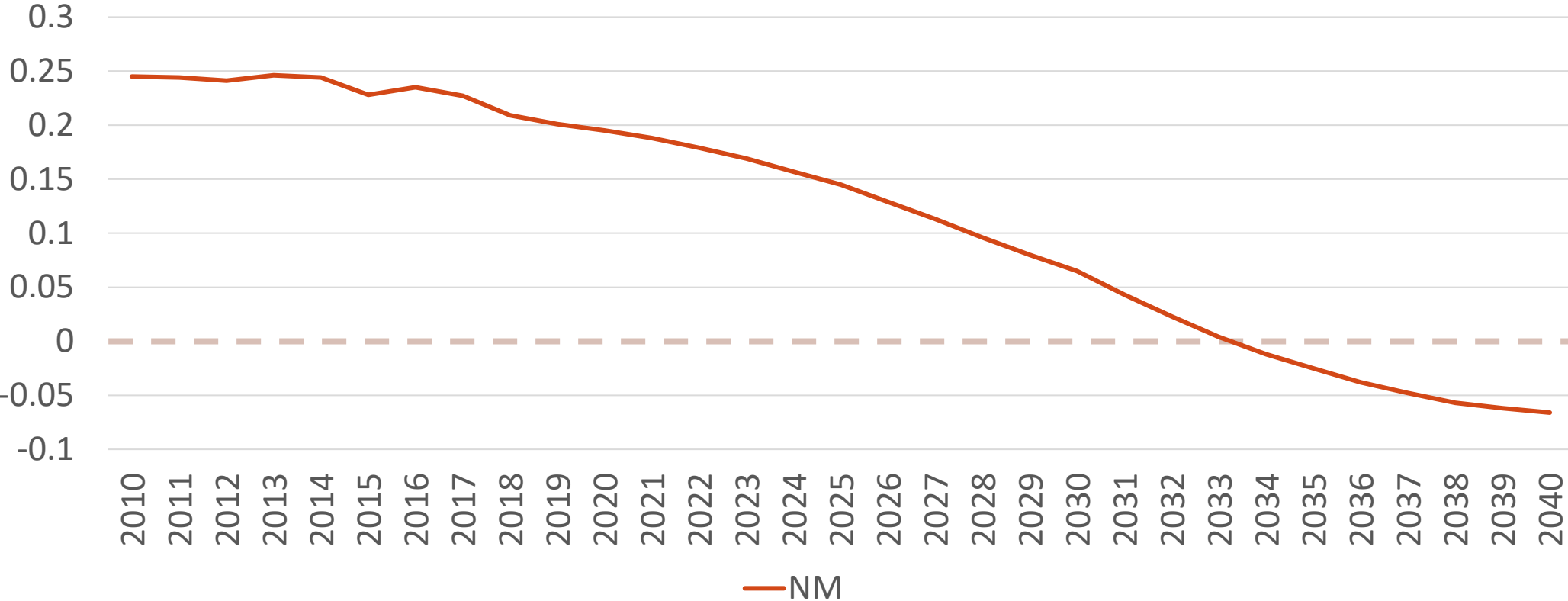
**Assumption:** Migration from 2020-2040 will gradually increase until it reaches the average of migration patterns observed in the 2000s and the 2010s, thus allowing for periods of higher migration and lower migration.

# Assumptions

# NM Population Projection

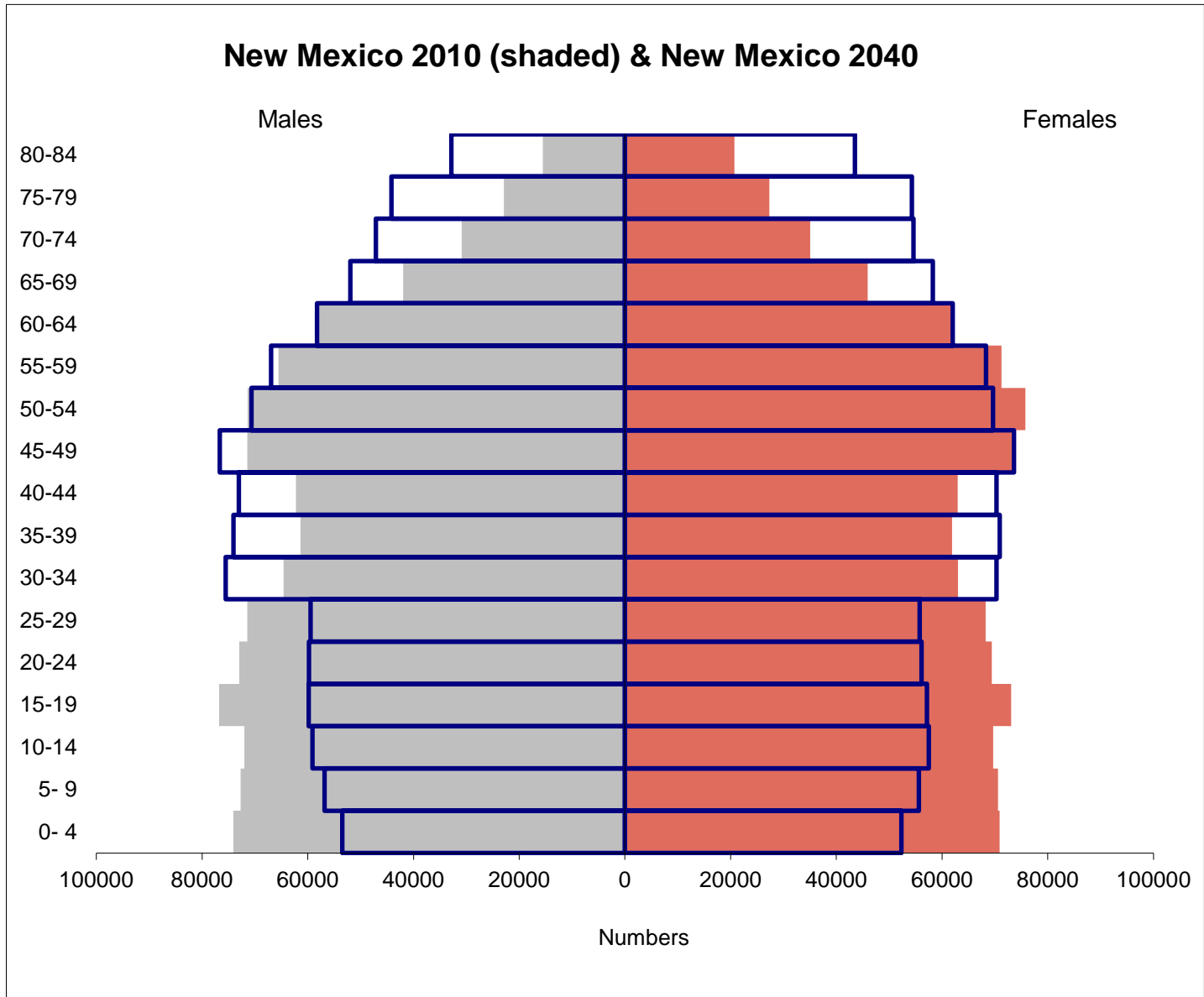


# Projected Growth Rate for New Mexico

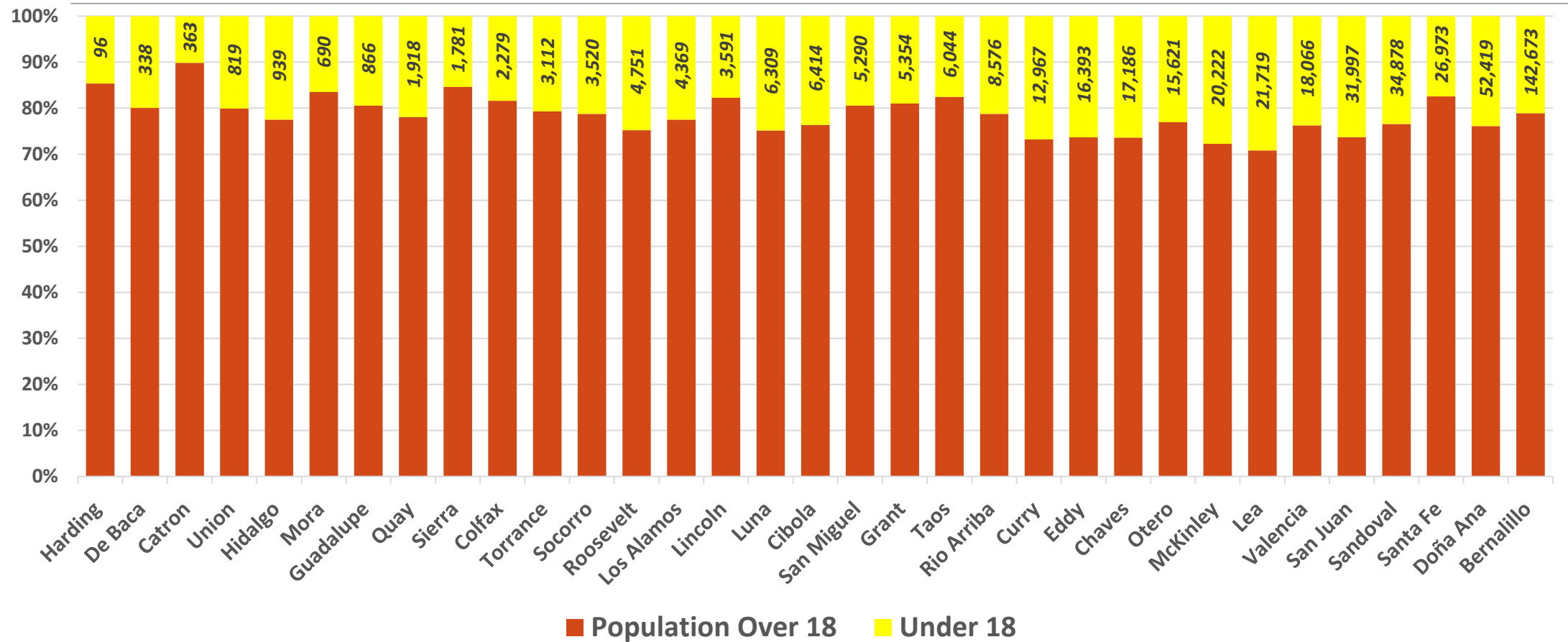




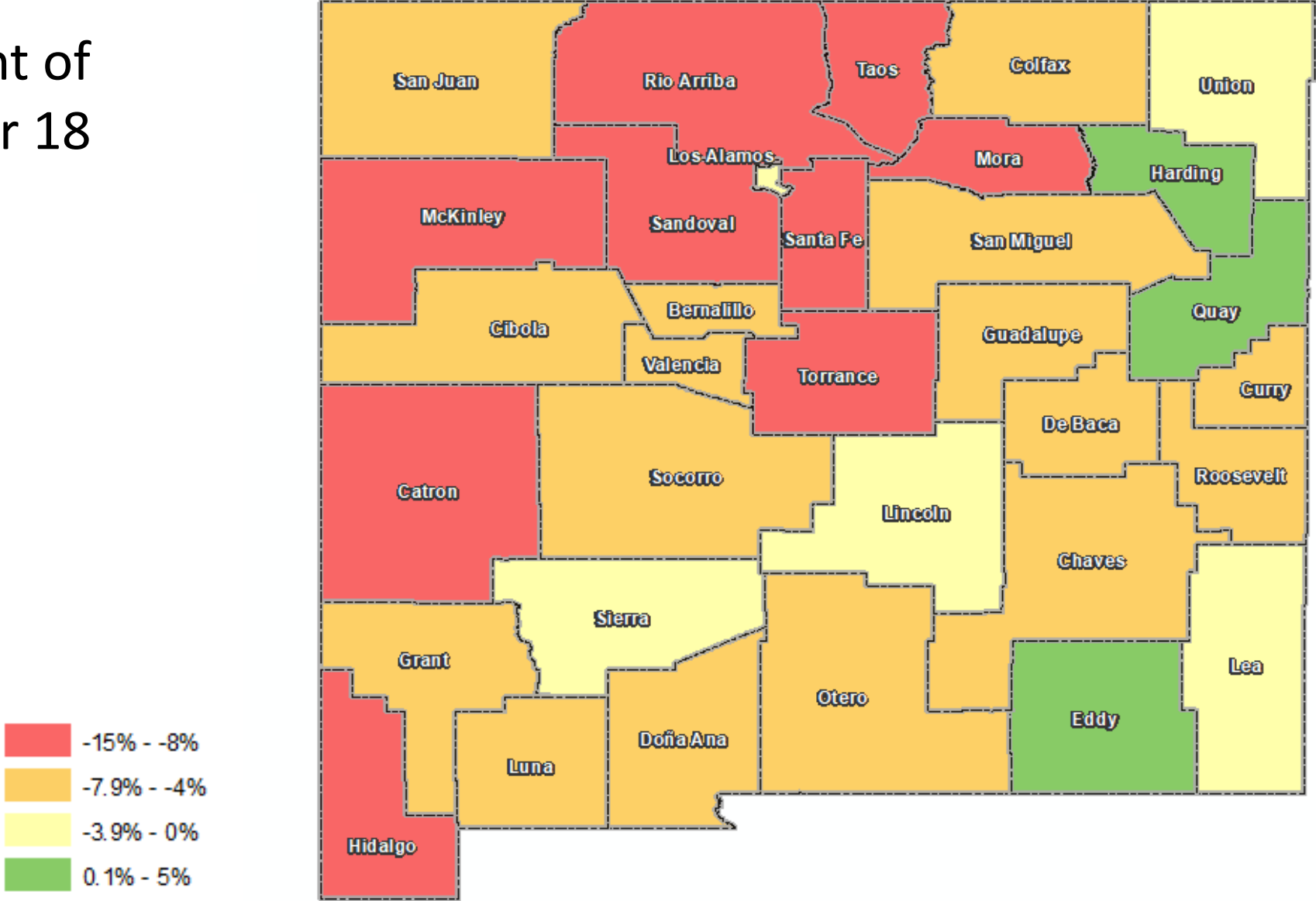
# Changing Age Structure



# 2020 Populations for New Mexico Counties

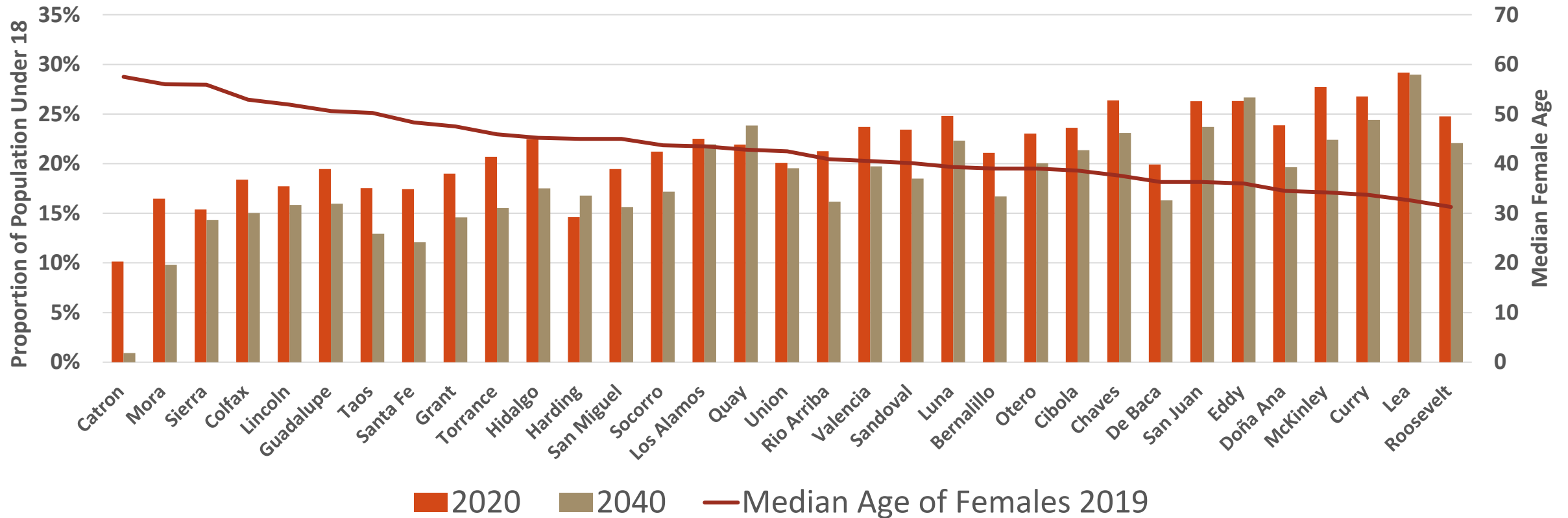


# Change in Percent of Population Under 18 2010-2040



Source: UNM Geospatial and Population Studies ([gps.unm.edu](http://gps.unm.edu))

# Proportion of County Population Under Age 18 and Median Female Age



Source: UNM Geospatial and Population Studies ([gps.unm.edu](https://gps.unm.edu))

Median Age: U.S. Census Bureau, 2019 ACS 5-year estimates, (S0101 age and sex table)

Increase in fertility  
among residents  
(not particularly  
realistic)

Reduce out  
migration of young  
people

Attract young  
people to the state

Increased births due  
to more people of  
childbearing age

Factors that could alter our trajectory

# When to expect revised projections?

- Currently expect the Census Bureau to release the Housing and Demographic Characteristic File in May 2023
  - Provides key components for projections: age and sex distribution of population
- Review and evaluate quality of the Census Release
- Revised projections ~Fall 2023

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**Questions or  
Comments???**

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