

Estimating conditional average causal effect

For conditional average causal effect (CACE) estimation, DoWhy relies on the EconML package. All methods from the EconML package can be called from DoWhy's estimation API, thus providing a common interface for estimation methods. In addition, regression methods can be used for CACE estimation too.

For CACE estimation, we need to specify the effect modifiers, either directly while calling *CausalModel* or as a part of the graph.

Linear regression

```
>>> linear_estimate = model.estimate_effect(identified_estimand,
>>>                                     method_name="backdoor.linear_regression
>>>                                     control_value=0,
>>>                                     treatment_value=1)
>>> print(linear_estimate)
```

DML method from EconML

```
>>> from sklearn.preprocessing import PolynomialFeatures
>>> from sklearn.linear_model import LassoCV
>>> from sklearn.ensemble import GradientBoostingRegressor
>>> dml_estimate = model.estimate_effect(identified_estimand, method_name="backdoo
>>>                                     control_value = 0,
>>>                                     treatment_value = 1,
>>>                                     target_units = lambda df: df["X0"]>1, # condi
>>>                                     confidence_intervals=False,
>>>                                     method_params={"init_params":{"model_y":Gradien
>>>                                                         'model_t': Gradie
>>>                                                         "model_final":Las
```

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```
>>>                                     "fit_params":{}}})  
>> print(dml_estimate)
```

For a complete analysis using CACE estimators, you can refer to the notebook, [Conditional Average Treatment Effects \(CATE\) with DoWhy and EconML](#)

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