

Table S1

Results of the Additional Meta-Analysis of the 2I/E Model

Math self-concept							Verbal self-concept																				
Model 4a							Model 5a							Model 4b							Model 5b						
Predictor	B	SE	β	B	SE	β	Predictor	B	SE	β	B	SE	β	B	SE	β											
Math achievement level	.53***	.04	.53	.39***	.03	.39	Verbal achievement level	.34***	.06	.34	.25***	.06	.25														
Math–verbal achievement levels	.19***	.03	.16	.15***	.04	.12	Verbal–math achievement levels	.22***	.04	.19	.17***	.04	.15														
Math achievement change	.13**	.05	.13	.15*	.06	.15	Verbal achievement change	.10	.06	.10	.11	.07	.11														
Math self-concept	—	—	—	.31***	.03	.31	Verbal self-concept	—	—	—	.34***	.05	.34														

Note. The additional meta-analysis only includes those 2I/E model studies that controlled for students' prior self-concepts. The table shows the average results over 20 imputed datasets. All variables are standardized except for the differences between the achievement levels. The standard errors are corrected for the hierarchical structure of the data (students from different studies). Significant values are highlighted in bold. $N = 8,383$. * $p < .05$. ** $p < .01$. *** $p < .001$.

MPlus Syntax and Model Results

Model 1a

DATA:

```
FILE = data.dat;
TYPE = imputation;
```

VARIABLE:

```
NAMES =
id dataset imp
Zmsc Zvsc
Zmlevel Zvlevel
mdiff vdiff
Zmchange Zvchange
achop
Zperiod
Zage Zgrade
aca nonaca notrack
gender
migr;
USEVARIABLES =
Zmsc
Zmlevel
mdiff
Zmchange;
CLUSTER = dataset;
```

ANALYSIS:

```
TYPE = complex;
ESTIMATOR = mlr;
```

MODEL:

```
Zmsc ON Zmlevel mdiff Zmchange;
```

OUTPUT:

```
STDYX;
```

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Rate of Missing
ZMSC ON					
ZMLEVEL	0.373	0.054	6.861	0.000	0.373
MDIFF	0.340	0.059	5.765	0.000	0.340
ZMCHANGE	0.088	0.016	5.330	0.000	0.088
Intercepts					
ZMSC	0.000	0.000	-0.232	0.816	0.000
Residual Variances					
ZMSC	0.676	0.019	34.706	0.000	0.676

STANDARDIZED MODEL RESULTS

STDYX Standardization

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Rate of Missing
ZMSC ON					
ZMLEVEL	0.373	0.055	6.781	0.000	0.002
MDIFF	0.286	0.049	5.773	0.000	0.002
ZMCHANGE	0.088	0.017	5.293	0.000	0.023
Intercepts					
ZMSC	0.000	0.000	0.000	1.000	0.091
Residual Variances					
ZMSC	0.676	0.017	40.602	0.000	0.015

Model 1b

DATA:

```
FILE = data.dat;
TYPE = imputation;
```

VARIABLE:

```
NAMES =
id dataset imp
Zmsc Zvsc
Zmlevel Zvlevel
mdiff vdiff
Zmchange Zvchange
achop
Zperiod
Zage Zgrade
aca nonaca notrack
gender
migr;
USEVARIABLES =
Zvsc
Zvlevel
vdiff
Zvchange;
CLUSTER = dataset;
```

ANALYSIS:

```
TYPE = complex;
ESTIMATOR = mlr;
```

MODEL:

```
Zvsc ON Zvlevel vdiff Zvchange;
```

OUTPUT:

```
STDYX;
```

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Rate of Missing
ZVSC ON					
ZVLEVEL	0.310	0.025	12.308	0.000	0.310
VDIFF	0.213	0.021	9.910	0.000	0.213
ZVCHANGE	0.108	0.014	7.727	0.000	0.108
Intercepts					
ZVSC	0.000	0.000	-0.063	0.950	0.000
Residual Variances					
ZVSC	0.814	0.017	46.717	0.000	0.814

STANDARDIZED MODEL RESULTS

STDYX Standardization

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Rate of Missing
ZVSC ON					
ZVLEVEL	0.310	0.025	12.243	0.000	0.037
VDIFF	0.179	0.019	9.592	0.000	0.047
ZVCHANGE	0.108	0.014	7.774	0.000	0.044
Intercepts					
ZVSC	0.000	0.000	0.000	1.000	0.091
Residual Variances					
ZVSC	0.814	0.016	51.553	0.000	0.035

Model 2a

DATA:

```
FILE = data.dat;
TYPE = imputation;
```

VARIABLE:

```
NAMES =
id dataset imp
Zmsc Zvsc
Zmlevel Zvlevel
mdiff vdiff
Zmchange Zvchange
achop
Zperiod
Zage Zgrade
aca nonaca notrack
gender
migr;
```

USEVARIABLES =

Zmsc

Zmlevel

mdiff

Zmchange

achop

Zperiod

Zage

gender

migr

sXachop dXachop tXachop

sXperiod dXperiod tXperiod

sXage dXage tXage

sXgender dXgender tXgender

sXmigr dXmigr tXmigr;

CLUSTER = dataset;

DEFINE:

sXachop = Zmlevel*achop;

dXachop = mdiff*achop;

tXachop = Zmchange*achop;

sXperiod = Zmlevel*Zperiod;

dXperiod = mdiff*Zperiod;

tXperiod = Zmchange*Zperiod;

sXage = Zmlevel*Zage;

dXage = mdiff*Zage;

tXage = Zmchange*Zage;

sXgender = Zmlevel*gender;

dXgender = mdiff*gender;

tXgender = Zmchange*gender;

sXmigr = Zmlevel*migr;

dXmigr = mdiff*migr;

tXmigr = Zmchange*migr;

ANALYSIS:

TYPE = complex;

ESTIMATOR = mlr;

MODEL:

Zmsc ON

Zmlevel mdiff Zmchange

achop sXachop dXachop tXachop

Zperiod sXperiod dXperiod tXperiod

Zage sXage dXage tXage

gender sXgender dXgender tXgender

migr sXmigr dXmigr tXmigr;

OUTPUT:

STDYX;

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Rate of Missing
ZMSC ON					
ZMLEVEL	0.467	0.021	22.134	0.000	0.468
MDIFF	0.193	0.011	17.175	0.000	0.193
ZMCHANGE	0.124	0.012	10.346	0.000	0.124
ACHOP	-0.001	0.003	-0.261	0.794	-0.001
SXACHOP	-0.130	0.031	-4.238	0.000	-0.130
DXACHOP	0.084	0.041	2.048	0.041	0.084
TXACHOP	-0.073	0.014	-5.241	0.000	-0.072
ZPERIOD	-0.015	0.004	-3.923	0.000	-0.015
SXPERIOD	-0.040	0.025	-1.558	0.119	-0.039
DXPERIOD	0.036	0.021	1.694	0.090	0.036
TXPERIOD	-0.011	0.010	-1.093	0.274	-0.011
ZAGE	-0.002	0.003	-0.622	0.534	-0.002
SXAGE	-0.057	0.022	-2.564	0.010	-0.056
DXAGE	0.065	0.019	3.484	0.000	0.065
TXAGE	-0.015	0.006	-2.347	0.019	-0.015
GENDER	-0.319	0.025	-12.971	0.000	-0.320
SXGENDER	0.022	0.009	2.372	0.018	0.021
DXGENDER	0.066	0.015	4.540	0.000	0.067
TXGENDER	0.002	0.007	0.306	0.760	0.003
MIGR	0.146	0.022	6.636	0.000	0.147
SXMIGR	-0.050	0.016	-3.092	0.002	-0.051
DXMIGR	-0.027	0.014	-1.879	0.060	-0.027
TXMIGR	0.013	0.009	1.509	0.131	0.012
Intercepts					
ZMSC	0.130	0.019	6.862	0.000	0.131
Residual Variances					
ZMSC	0.639	0.018	35.999	0.000	0.639

STANDARDIZED MODEL RESULTS

STDYX Standardization

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Rate of Missing
ZMSC ON					
ZMLEVEL	0.468	0.023	20.390	0.000	0.029
MDIFF	0.162	0.010	16.598	0.000	0.125
ZMCHANGE	0.124	0.013	9.439	0.000	0.054
ACHOP	0.000	0.002	-0.286	0.775	0.034
SXACHOP	-0.088	0.022	-4.069	0.000	0.005
DXACHOP	0.043	0.021	2.040	0.041	0.020
TXACHOP	-0.049	0.010	-4.721	0.000	0.144
ZPERIOD	-0.015	0.007	-2.225	0.026	0.012
SXPERIOD	-0.039	0.029	-1.336	0.182	0.007
DXPERIOD	0.030	0.021	1.437	0.151	0.008
TXPERIOD	-0.011	0.011	-1.009	0.313	0.064
ZAGE	-0.002	0.003	-0.623	0.533	0.112

SXAGE	-0.056	0.025	-2.290	0.022	0.008
DXAGE	0.058	0.021	2.790	0.005	0.012
TXAGE	-0.015	0.007	-2.018	0.044	0.159
GENDER	-0.160	0.011	-14.386	0.000	0.027
SXGENDER	0.015	0.007	2.285	0.022	0.184
DXGENDER	0.038	0.008	4.688	0.000	0.090
TXGENDER	0.002	0.005	0.389	0.698	0.301
MIGR	0.059	0.010	6.065	0.000	0.131
SXMIGR	-0.023	0.008	-2.993	0.003	0.087
DXMIGR	-0.010	0.005	-1.931	0.053	0.085
TXMIGR	0.006	0.004	1.355	0.175	0.272
Intercepts					
ZMSC	0.131	0.018	7.225	0.000	0.007
Residual Variances					
ZMSC	0.639	0.014	45.408	0.000	0.014

Model 2b

DATA:

```
FILE = data.dat;
TYPE = imputation;
```

VARIABLE:

```
NAMES =
id dataset imp
Zmsc Zvsc
Zmlevel Zvlevel
mdiff vdiff
Zmchange Zvchange
achop
Zperiod
Zage Zgrade
aca nonaca notrack
gender
migr;
USEVARIABLES =
Zvsc
Zvlevel
vdiff
Zvchange
achop
Zperiod
Zage
gender
migr
sXachop dXachop tXachop
sXperiod dXperiod tXperiod
sXage dXage tXage
sXgender dXgender tXgender
sXmigr dXmigr tXmigr;
CLUSTER = dataset;
```

DEFINE:

```
sXachop = Zvlevel*achop;
```

```
dXachop = vdiff*achop;
tXachop = Zvchange*achop;
sXperiod = Zvlevel*Zperiod;
dXperiod = vdiff*Zperiod;
tXperiod = Zvchange*Zperiod;
sXage = Zvlevel*Zage;
dXage = vdiff*Zage;
tXage = Zvchange*Zage;
sXgender = Zvlevel*gender;
dXgender = vdiff*gender;
tXgender = Zvchange*gender;
sXmigr = Zvlevel*migr;
dXmigr = vdiff*migr;
tXmigr = Zvchange*migr;
```

ANALYSIS:

```
TYPE = complex;
ESTIMATOR = mlr;
```

MODEL:

```
Zvsc ON
Zvlevel vdiff Zvchange
achop sXachop dXachop tXachop
Zperiod sXperiod dXperiod tXperiod
Zage sXage dXage tXage
gender sXgender dXgender tXgender
migr sXmigr dXmigr tXmigr;
```

OUTPUT:

```
STDYX;
```

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Rate of Missing
ZVSC					
ON					
ZVLEVEL	0.367	0.024	15.299	0.000	0.367
VDIFF	0.198	0.014	14.452	0.000	0.198
ZVCHANGE	0.148	0.015	9.618	0.000	0.150
ACHOP	0.001	0.002	0.362	0.717	0.001
SXACHOP	-0.120	0.021	-5.682	0.000	-0.119
DXACHOP	-0.036	0.035	-1.043	0.297	-0.035
TXACHOP	-0.082	0.019	-4.428	0.000	-0.082
ZPERIOD	-0.005	0.004	-1.160	0.246	-0.005
SXPERIOD	-0.005	0.013	-0.406	0.684	-0.005
DXPERIOD	-0.005	0.017	-0.286	0.775	-0.006
TXPERIOD	-0.002	0.017	-0.124	0.901	-0.001
ZAGE	-0.001	0.006	-0.114	0.909	-0.001
SXAGE	-0.025	0.008	-3.061	0.002	-0.026
DXAGE	0.028	0.012	2.453	0.014	0.029
TXAGE	0.002	0.012	0.145	0.885	0.002
GENDER	0.124	0.012	10.045	0.000	0.122
SXGENDER	0.027	0.014	1.955	0.051	0.027
DXGENDER	-0.001	0.011	-0.113	0.910	-0.001
TXGENDER	-0.015	0.010	-1.504	0.133	-0.016
MIGR	0.062	0.038	1.641	0.101	0.060

SXMIGR	-0.054	0.011	-4.821	0.000	-0.054
DXMIGR	-0.004	0.011	-0.354	0.723	-0.003
TXMIGR	0.003	0.011	0.300	0.765	0.001
Intercepts					
ZVSC	-0.084	0.008	-10.213	0.000	-0.083
Residual Variances					
ZVSC	0.801	0.019	42.425	0.000	0.801

STANDARDIZED MODEL RESULTS

STDYX Standardization

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Rate of Missing
ZVSC ON					
ZVLEVEL	0.367	0.025	14.462	0.000	0.106
VDIFF	0.166	0.013	13.270	0.000	0.305
ZVCHANGE	0.150	0.016	9.624	0.000	0.119
ACHOP	0.000	0.001	0.355	0.723	0.175
SXACHOP	-0.081	0.016	-4.943	0.000	0.134
DXACHOP	-0.018	0.018	-0.959	0.338	0.091
TXACHOP	-0.056	0.013	-4.229	0.000	0.128
ZPERIOD	-0.005	0.005	-1.036	0.300	0.046
SXPERIOD	-0.005	0.013	-0.400	0.689	0.045
DXPERIOD	-0.005	0.014	-0.345	0.730	0.030
TXPERIOD	-0.001	0.017	-0.072	0.943	0.052
ZAGE	-0.001	0.006	-0.102	0.918	0.157
SXAGE	-0.026	0.010	-2.698	0.007	0.146
DXAGE	0.025	0.011	2.225	0.026	0.072
TXAGE	0.002	0.012	0.177	0.859	0.155
GENDER	0.061	0.006	9.527	0.000	0.366
SXGENDER	0.019	0.010	1.948	0.051	0.131
DXGENDER	-0.001	0.007	-0.085	0.932	0.365
TXGENDER	-0.011	0.006	-1.775	0.076	0.287
MIGR	0.024	0.016	1.551	0.121	0.130
SXMIGR	-0.025	0.006	-3.978	0.000	0.353
DXMIGR	-0.001	0.004	-0.297	0.766	0.354
TXMIGR	0.000	0.006	0.086	0.932	0.418
Intercepts					
ZVSC	-0.083	0.009	-9.155	0.000	0.337
Residual Variances					
ZVSC	0.801	0.014	57.724	0.000	0.026

Model 3a

DATA:

FILE = data.dat;

TYPE = imputation;

VARIABLE:

```
NAMES =
id dataset imp
Zmsc Zvsc
Zmlevel Zvlevel
mdiff vdiff
Zmchange Zvchange
achop
Zperiod
Zage Zgrade
aca nonaca notrack
gender
migr;
USEVARIABLES =
Zmsc
Zmlevel
mdiff
Zmchange
achop
Zperiod
aca nonaca
gender
migr
sXachop dXachop tXachop
sXperiod dXperiod tXperiod
sXaca dXaca tXaca
sXnonaca dXnonaca tXnonaca
sXgender dXgender tXgender
sXmigr dXmigr tXmigr;
CLUSTER = dataset;
```

DEFINE:

```
sXachop = Zmlevel*achop;
dXachop = mdiff*achop;
tXachop = Zmchange*achop;
sXperiod = Zmlevel*Zperiod;
dXperiod = mdiff*Zperiod;
tXperiod = Zmchange*Zperiod;
sXaca = Zmlevel*aca;
dXaca = mdiff*aca;
tXaca = Zmchange*aca;
sXnonaca = Zmlevel*nonaca;
dXnonaca = mdiff*nonaca;
tXnonaca = Zmchange*nonaca;
sXgender = Zmlevel*gender;
dXgender = mdiff*gender;
tXgender = Zmchange*gender;
sXmigr = Zmlevel*migr;
dXmigr = mdiff*migr;
tXmigr = Zmchange*migr;
```

ANALYSIS:

```
TYPE = complex;
ESTIMATOR = mlr;
```

MODEL:

```
Zmsc ON
Zmlevel mdiff Zmchange
achop sXachop dXachop tXachop
Zperiod sXperiod dXperiod tXperiod
aca
nonaca
gender sXgender dXgender tXgender
migr sXmigr dXmigr tXmigr;
Zmsc ON sXaca (scaca);
Zmsc ON dXaca (daca);
Zmsc ON tXaca (taca);
Zmsc ON sXnonaca (snonaca);
Zmsc ON dXnonaca (dnonaca);
Zmsc ON tXnonaca (tnonaca);
```

MODEL CONSTRAINT:

```
new(track_s);
new(track_d);
new(track_t);
track_s = scaca - snonaca;
track_d = daca - dnonaca;
track_t = taca - tnonaca;
```

OUTPUT:

```
STDYX;
```

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Rate of Missing
ZMSC ON					
ZMLEVEL	0.566	0.032	17.451	0.000	0.567
MDIFF	0.047	0.036	1.302	0.193	0.047
ZMCHANGE	0.150	0.017	8.747	0.000	0.150
ACHOP	-0.015	0.005	-2.837	0.005	-0.015
SXACHOP	-0.114	0.028	-4.013	0.000	-0.115
DXACHOP	0.090	0.041	2.200	0.028	0.091
TXACHOP	-0.070	0.015	-4.621	0.000	-0.072
ZPERIOD	-0.021	0.006	-3.542	0.000	-0.021
SXPERIOD	-0.019	0.019	-1.001	0.317	-0.019
DXPERIOD	0.018	0.014	1.277	0.201	0.017
TXPERIOD	-0.010	0.008	-1.302	0.193	-0.009
ACA	-0.075	0.014	-5.174	0.000	-0.073
NONACA	0.037	0.011	3.355	0.001	0.036
GENDER	-0.316	0.024	-13.352	0.000	-0.317
SXGENDER	0.030	0.009	3.194	0.001	0.028
DXGENDER	0.057	0.013	4.400	0.000	0.056
TXGENDER	0.005	0.007	0.682	0.495	0.007
MIGR	0.139	0.024	5.703	0.000	0.138
SXMIGR	-0.051	0.014	-3.628	0.000	-0.050
DXMIGR	-0.013	0.013	-1.031	0.303	-0.013
TXMIGR	0.006	0.009	0.681	0.496	0.004
SXACA	-0.091	0.039	-2.367	0.018	-0.092
DXACA	0.194	0.039	5.023	0.000	0.193
TXACA	-0.054	0.017	-3.102	0.002	-0.054

SXNONACA	-0.166	0.032	-5.237	0.000	-0.165
DXNONACA	0.184	0.025	7.317	0.000	0.183
TXNONACA	-0.029	0.014	-1.997	0.046	-0.031
Intercepts					
ZMSC	0.140	0.021	6.698	0.000	0.140
Residual Variances					
ZMSC	0.633	0.017	37.363	0.000	0.633
New/Additional Parameters					
TRACK_S	0.074	0.012	6.464	0.000	0.201
TRACK_D	0.010	0.018	0.551	0.582	0.101
TRACK_T	-0.026	0.008	-3.167	0.002	0.313

STANDARDIZED MODEL RESULTS

STDYX Standardization

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Rate of Missing
ZMSC ON					
ZMLEVEL	0.567	0.032	17.705	0.000	0.041
MDIFF	0.040	0.032	1.257	0.209	0.065
ZMCHANGE	0.150	0.018	8.553	0.000	0.109
ACHOP	-0.008	0.003	-2.857	0.004	0.027
SXACHOP	-0.078	0.020	-3.837	0.000	0.011
DXACHOP	0.047	0.022	2.172	0.030	0.019
TXACHOP	-0.049	0.011	-4.476	0.000	0.115
ZPERIOD	-0.021	0.010	-2.165	0.030	0.007
SXPERIOD	-0.019	0.020	-0.925	0.355	0.021
DXPERIOD	0.014	0.013	1.091	0.275	0.020
TXPERIOD	-0.009	0.008	-1.170	0.242	0.082
ACA	-0.034	0.007	-5.117	0.000	0.055
NONACA	0.018	0.005	3.248	0.001	0.038
GENDER	-0.159	0.011	-14.507	0.000	0.025
SXGENDER	0.020	0.007	2.706	0.007	0.234
DXGENDER	0.032	0.007	4.603	0.000	0.231
TXGENDER	0.005	0.005	1.005	0.315	0.222
MIGR	0.056	0.011	5.303	0.000	0.080
SXMIGR	-0.023	0.007	-3.411	0.001	0.164
DXMIGR	-0.005	0.005	-1.008	0.314	0.123
TXMIGR	0.002	0.004	0.517	0.605	0.266
SXACA	-0.054	0.024	-2.258	0.024	0.018
DXACA	0.098	0.023	4.274	0.000	0.047
TXACA	-0.030	0.010	-2.931	0.003	0.111
SXNONACA	-0.096	0.026	-3.758	0.000	0.010
DXNONACA	0.097	0.023	4.244	0.000	0.027
TXNONACA	-0.020	0.009	-2.118	0.034	0.110
Intercepts					
ZMSC	0.141	0.020	7.011	0.000	0.014
Residual Variances					
ZMSC	0.633	0.015	43.031	0.000	0.018

Model 3b

DATA:

```
FILE = data.dat;  
TYPE = imputation;
```

VARIABLE:

```
NAMES =  
id dataset imp  
Zmsc Zvsc  
Zmlevel Zvlevel  
mdiff vdiff  
Zmchange Zvchange  
achop  
Zperiod  
Zage Zgrade  
aca nonaca notrack  
gender  
migr;  
USEVARIABLES =  
Zvsc  
Zvlevel  
vdiff  
Zvchange  
achop  
Zperiod  
aca nonaca  
gender  
migr  
sXachop dXachop tXachop  
sXperiod dXperiod tXperiod  
sXaca dXaca tXaca  
sXnonaca dXnonaca tXnonaca  
sXgender dXgender tXgender  
sXmigr dXmigr tXmigr;  
CLUSTER = dataset;
```

DEFINE:

```
sXachop = Zvlevel*achop;  
dXachop = vdiff*achop;  
tXachop = Zvchange*achop;  
sXperiod = Zvlevel*Zperiod;  
dXperiod = vdiff*Zperiod;  
tXperiod = Zvchange*Zperiod;  
sXaca = Zvlevel*aca;  
dXaca = vdiff*aca;  
tXaca = Zvchange*aca;  
sXnonaca = Zvlevel*nonaca;  
dXnonaca = vdiff*nonaca;  
tXnonaca = Zvchange*nonaca;  
sXgender = Zvlevel*gender;  
dXgender = vdiff*gender;  
tXgender = Zvchange*gender;  
sXmigr = Zvlevel*migr;  
dXmigr = vdiff*migr;  
tXmigr = Zvchange*migr;
```

ANALYSIS:

```
TYPE = complex;
ESTIMATOR = mlr;
```

MODEL:

```
Zvsc ON
Zvlevel vdiff Zvchange
achop sXachop dXachop tXachop
Zperiod sXperiod dXperiod tXperiod
aca
nonaca
gender sXgender dXgender tXgender
migr sXmigr dXmigr tXmigr;
Zvsc ON sXaca (scaca);
Zvsc ON dXaca (daca);
Zvsc ON tXaca (taca);
Zvsc ON sXnonaca (snonaca);
Zvsc ON dXnonaca (dnonaca);
Zvsc ON tXnonaca (tnonaca);
```

MODEL CONSTRAINT:

```
new(track_s);
new(track_d);
new(track_t);
track_s = scaca - snonaca;
track_d = daca - dnonaca;
track_t = taca - tnonaca;
```

OUTPUT:

```
STDYX;
```

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Rate of Missing
ZVSC ON					
ZVLEVEL	0.401	0.020	19.565	0.000	0.400
VDIFF	0.133	0.024	5.672	0.000	0.135
ZVCHANGE	0.134	0.027	4.939	0.000	0.135
ACHOP	-0.012	0.006	-1.938	0.053	-0.011
SXACHOP	-0.104	0.025	-4.164	0.000	-0.103
DXACHOP	-0.036	0.034	-1.058	0.290	-0.040
TXACHOP	-0.078	0.018	-4.269	0.000	-0.079
ZPERIOD	-0.011	0.005	-2.318	0.020	-0.011
SXPERIOD	0.006	0.009	0.629	0.529	0.006
DXPERIOD	-0.009	0.015	-0.627	0.530	-0.011
TXPERIOD	-0.004	0.015	-0.267	0.789	-0.005
ACA	-0.065	0.025	-2.614	0.009	-0.063
NONACA	0.018	0.008	2.169	0.030	0.018
GENDER	0.122	0.012	10.030	0.000	0.126
SXGENDER	0.020	0.015	1.401	0.161	0.022
DXGENDER	-0.001	0.011	-0.085	0.932	-0.004
TXGENDER	-0.014	0.010	-1.449	0.147	-0.016
MIGR	0.058	0.039	1.496	0.135	0.066
SXMIGR	-0.049	0.015	-3.323	0.001	-0.047

DXMIGR	0.001	0.012	0.078	0.938	0.001
TXMIGR	0.003	0.011	0.241	0.810	0.001
SXACA	0.007	0.024	0.276	0.782	0.004
DXACA	0.092	0.026	3.486	0.000	0.091
TXACA	0.011	0.034	0.331	0.740	0.012
SXNONACA	-0.071	0.017	-4.093	0.000	-0.070
DXNONACA	0.072	0.024	3.028	0.002	0.073
TXNONACA	0.017	0.025	0.681	0.496	0.017
Intercepts					
ZVSC	-0.072	0.013	-5.585	0.000	-0.075
Residual Variances					
ZVSC	0.799	0.018	44.021	0.000	0.798
New/Additional Parameters					
TRACK_S	0.078	0.024	3.194	0.001	0.131
TRACK_D	0.019	0.019	1.010	0.312	0.351
TRACK_T	-0.006	0.021	-0.270	0.787	0.068

STANDARDIZED MODEL RESULTS

STDYX Standardization

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Rate of Missing
ZVSC ON					
ZVLEVEL	0.400	0.025	16.218	0.000	0.227
VDIFF	0.114	0.021	5.382	0.000	0.275
ZVCHANGE	0.135	0.029	4.670	0.000	0.145
ACHOP	-0.006	0.003	-1.787	0.074	0.117
SXACHOP	-0.070	0.019	-3.682	0.000	0.137
DXACHOP	-0.020	0.017	-1.218	0.223	0.092
TXACHOP	-0.054	0.014	-3.949	0.000	0.165
ZPERIOD	-0.011	0.006	-1.801	0.072	0.007
SXPERIOD	0.006	0.010	0.652	0.514	0.063
DXPERIOD	-0.009	0.013	-0.668	0.504	0.076
TXPERIOD	-0.005	0.016	-0.313	0.754	0.064
ACA	-0.030	0.012	-2.523	0.012	0.070
NONACA	0.009	0.004	2.295	0.022	0.104
GENDER	0.063	0.006	9.954	0.000	0.307
SXGENDER	0.015	0.010	1.514	0.130	0.136
DXGENDER	-0.002	0.005	-0.521	0.602	0.311
TXGENDER	-0.011	0.007	-1.534	0.125	0.271
MIGR	0.027	0.015	1.783	0.075	0.055
SXMIGR	-0.022	0.008	-2.793	0.005	0.269
DXMIGR	0.000	0.005	0.088	0.930	0.406
TXMIGR	0.001	0.005	0.110	0.913	0.449
SXACA	0.003	0.014	0.181	0.856	0.066
DXACA	0.046	0.015	3.152	0.002	0.098
TXACA	0.006	0.020	0.327	0.744	0.189
SXNONACA	-0.043	0.014	-3.082	0.002	0.245
DXNONACA	0.039	0.015	2.515	0.012	0.230
TXNONACA	0.011	0.018	0.609	0.543	0.264

Intercepts					
ZVSC	-0.075	0.012	-6.130	0.000	0.102
Residual Variances					
ZVSC	0.799	0.014	55.975	0.000	0.032

Model 4a

DATA:

```
FILE = data2.dat;
TYPE = imputation;
```

VARIABLE:

```
NAMES =
id dataset imp
Zmsc Zvsc
Zmlevel Zvlevel
mdiff vdiff
Zmchange Zvchange
achop
Zperiod
Zage Zgrade
aca nonaca notrack
gender
migr
Zmsc_t0 Zvsc_t0;
USEVARIABLES =
Zmsc
Zmlevel
mdiff
Zmchange;
CLUSTER = dataset;
```

ANALYSIS:

```
TYPE = complex;
ESTIMATOR = mlr;
```

MODEL:

```
Zmsc ON Zmlevel mdiff Zmchange;
```

OUTPUT:

```
STDYX;
```

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Rate of Missing
ZMSC ON					
ZMLEVEL	0.529	0.036	14.565	0.000	0.529
MDIFF	0.187	0.029	6.395	0.000	0.187
ZMCHANGE	0.132	0.046	2.863	0.004	0.132
Intercepts					
ZMSC	0.000	0.000	-0.001	0.999	0.000

Residual Variances					
ZMSC	0.595	0.025	23.494	0.000	0.595

STANDARDIZED MODEL RESULTS

STDYX Standardization

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Rate of Missing
ZMSC ON					
ZMLEVEL	0.529	0.036	14.722	0.000	0.009
MDIFF	0.160	0.029	5.484	0.000	0.027
ZMCHANGE	0.132	0.046	2.853	0.004	0.010
Intercepts					
ZMSC	0.000	0.000	0.000	1.000	0.091
Residual Variances					
ZMSC	0.595	0.021	28.544	0.000	0.044

Model 4b

DATA:

```
FILE = data2.dat;
TYPE = imputation;
```

VARIABLE:

```
NAMES =
id dataset imp
Zmsc Zvsc
Zmlevel Zvlevel
mdiff vdiff
Zmchange Zvchange
achop
Zperiod
Zage Zgrade
aca nonaca notrack
gender
migr
Zmsc_t0 Zvsc_t0;
USEVARIABLES =
Zvsc
Zvlevel
vdiff
Zvchange;
CLUSTER = dataset;
```

ANALYSIS:

```
TYPE = complex;
ESTIMATOR = mlr;
```

MODEL:

```
Zvsc ON Zvlevel vdiff Zvchange;
```

OUTPUT:

STDYX;

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Rate of Missing
ZVSC ON					
ZVLEVEL	0.341	0.061	5.567	0.000	0.341
VDIFF	0.219	0.039	5.601	0.000	0.219
ZVCHANGE	0.095	0.063	1.508	0.132	0.095
Intercepts					
ZVSC	0.000	0.000	-0.010	0.992	0.000
Residual Variances					
ZVSC	0.776	0.075	10.363	0.000	0.776

STANDARDIZED MODEL RESULTS

STDYX Standardization

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Rate of Missing
ZVSC ON					
ZVLEVEL	0.341	0.061	5.614	0.000	0.006
VDIFF	0.187	0.038	4.900	0.000	0.031
ZVCHANGE	0.095	0.063	1.514	0.130	0.007
Intercepts					
ZVSC	0.000	0.000	0.000	1.000	0.091
Residual Variances					
ZVSC	0.776	0.074	10.488	0.000	0.003

Model 5a

DATA:

FILE = data2.dat;
TYPE = imputation;

VARIABLE:

NAMES =
id dataset imp
Zmsc Zvsc
Zmlevel Zvlevel
mdiff vdiff
Zmchange Zvchange
achop
Zperiod
Zage Zgrade

```
aca nonaca notrack
gender
migr
Zmsc_t0 Zvsc_t0;
USEVARIABLES =
Zmsc
Zmlevel
mdiff
Zmchange
Zmsc_t0;
CLUSTER = dataset;
```

ANALYSIS:

```
TYPE = complex;
ESTIMATOR = mlr;
```

MODEL:

```
Zmsc ON Zmlevel mdiff Zmchange Zmsc_t0;
```

OUTPUT:

```
STDYX;
```

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Rate of Missing
ZMSC ON					
ZMLEVEL	0.394	0.034	11.608	0.000	0.394
MDIFF	0.145	0.037	3.912	0.000	0.145
ZMCHANGE	0.152	0.060	2.544	0.011	0.152
ZMSC_T0	0.311	0.026	11.819	0.000	0.311
Intercepts					
ZMSC	0.000	0.000	0.031	0.975	0.000
Residual Variances					
ZMSC	0.522	0.030	17.296	0.000	0.522

STANDARDIZED MODEL RESULTS

STDYX Standardization

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Rate of Missing
ZMSC ON					
ZMLEVEL	0.394	0.035	11.187	0.000	0.017
MDIFF	0.124	0.033	3.717	0.000	0.025
ZMCHANGE	0.152	0.059	2.562	0.010	0.007
ZMSC_T0	0.311	0.027	11.373	0.000	0.056
Intercepts					
ZMSC	0.000	0.000	0.000	1.000	0.091

Residual Variances					
ZMSC	0.523	0.025	21.032	0.000	0.025

Model 5b

DATA:

```
FILE = data2.dat;
TYPE = imputation;
```

VARIABLE:

```
NAMES =
id dataset imp
Zmsc Zvsc
Zmlevel Zvlevel
mdiff vdiff
Zmchange Zvchange
achop
Zperiod
Zage Zgrade
aca nonaca notrack
gender
migr
Zmsc_t0 Zvsc_t0;
USEVARIABLES =
Zvsc
Zvlevel
vdiff
Zvchange
Zvsc_t0;
CLUSTER = dataset;
```

ANALYSIS:

```
TYPE = complex;
ESTIMATOR = mlr;
```

MODEL:

```
Zvsc ON Zvlevel vdiff Zvchange Zvsc_t0;
```

OUTPUT:

```
STDYX;
```

MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Rate of Missing
ZVSC ON					
ZVLEVEL	0.252	0.059	4.278	0.000	0.252
VDIFF	0.169	0.036	4.747	0.000	0.169
ZVCHANGE	0.109	0.069	1.579	0.114	0.109
ZVSC_T0	0.337	0.051	6.558	0.000	0.337
Intercepts					
ZVSC	0.000	0.000	-0.079	0.937	0.000

Residual Variances					
ZVSC	0.675	0.048	14.185	0.000	0.675

STANDARDIZED MODEL RESULTS

STDYX Standardization

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Rate of Missing
ZVSC ON					
ZVLEVEL	0.252	0.059	4.233	0.000	0.009
VDIFF	0.145	0.034	4.284	0.000	0.044
ZVCHANGE	0.109	0.069	1.576	0.115	0.005
ZVSC_T0	0.337	0.051	6.636	0.000	0.013
Intercepts					
ZVSC	0.000	0.000	0.000	1.000	0.091
Residual Variances					
ZVSC	0.675	0.042	16.213	0.000	0.008