

# Macro-Averaging

		Predicted		
		C1	€1	
True	C1	15	5	20
	€1	10	70	80
		25	75	100

		Predicted		
		C2	€2	
True	C2	20	10	30
	€2	12	58	70
		32	68	100

		Predicted		
		C3	€3	
True	C3	45	5	50
	€3	5	45	50
		50	50	100

$$prec(c1) = \frac{15}{25} = 0.600$$

$$prec(c2) = \frac{20}{32} = 0.625$$

$$prec(c3) = \frac{45}{50} = 0.900$$

$$avg. prec = \frac{prec(c1) + prec(c2) + prec(c3)}{3} = 0.708$$

$$recl(c1) = \frac{15}{20} = 0.750$$

$$recl(c2) = \frac{20}{30} = 0.667$$

$$recl(c3) = \frac{45}{50} = 0.900$$

$$avg. recl = \frac{recl(c1) + recl(c2) + recl(c3)}{3} = 0.772$$

# Micro-Averaging

		Predicted		
		C1	€1	
True	C1	15	5	20
	€1	10	70	80
		25	75	100

		Predicted		
		C2	€2	
True	C2	20	10	30
	€2	12	58	70
		32	68	100

		Predicted		
		C3	€3	
True	C3	45	5	50
	€3	5	45	50
		50	50	100

Σ

$$avg. prec = \frac{80}{107} = 0.748$$

$$avg. recl = \frac{80}{100} = 0.800$$

		Predicted		
		C	€	
True	C	80	20	100
	€	27	173	200
		107	193	300

Micro-Averaged estimates are in this case higher because the performance on the largest class (C3) was best