

The Demography of Clusters: First Findings from the Cluster Meta-Study

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This document provides an outline of a presentation and is incomplete without the accompanying oral commentary and discussion. It represents work in progress which is based on research conducted by Dr. Claas van der Linde and Prof. Michael E. Porter, both Harvard Business School. It is confidential and not to be cited. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means - electronic, mechanical, photocopying, recording, or otherwise - without the permission of Claas van der Linde or Michael E. Porter.

Cluster Meta-Study

The Need for New Methodologies

- A wealth of individual case studies and cluster reports
 - often more qualitative than quantitative
 - not standardized in methodology or depth of analysis
- Little systematic, quantitative evidence on the population of clusters as a whole
 - usually focused on a country or a specific region
 - often a narrow focus on some thematic aspect
 - suffer from incomplete data sources and methods



The Cluster Meta-Study

- A multiyear effort to aggregate data from existing cluster publications to learn more about the locational, economic, and competitive characteristics of clusters, the reasons behind their competitiveness, and their patterns of evolution over time

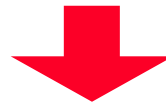
Meta-Analysis versus Meta-Study

Meta-Analysis

- Based on experimental studies
- Primarily quantitative data
- Underlying studies are quite uniform
- Focus on reporting studies
- Tests the impact of one or several variables on a dependent variable
- Seeks to prove a causal relationship

Meta-Study

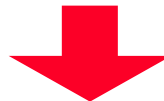
- Based on non-experimental information
- Codifies primarily qualitative data
- Underlying studies are not uniform
- Clusters as the unit of analysis
- Captures the universe of available studies
- Descriptive statistics and associations rather than causal relationships



Given the medical connotations of meta-analysis we employ the term **meta-study** for our purposes

The Cluster Template

- **Cluster Description**
 - Biographical information
 - Cluster characteristics
- **Location**
 - Geographic boundaries
 - Regional economic development
- **State of Competitiveness**
 - Indicators of competitiveness
- **Determinants of Competitiveness**
 - Factor conditions
 - Demand conditions
 - Related & supporting industries
 - Context for strategy and rivalry
- **Evolution Path**
 - Cluster birth
 - Cluster decline



A tool for systematically profiling clusters and assessing their competitiveness to allow comparison across disparate studies

Current Status

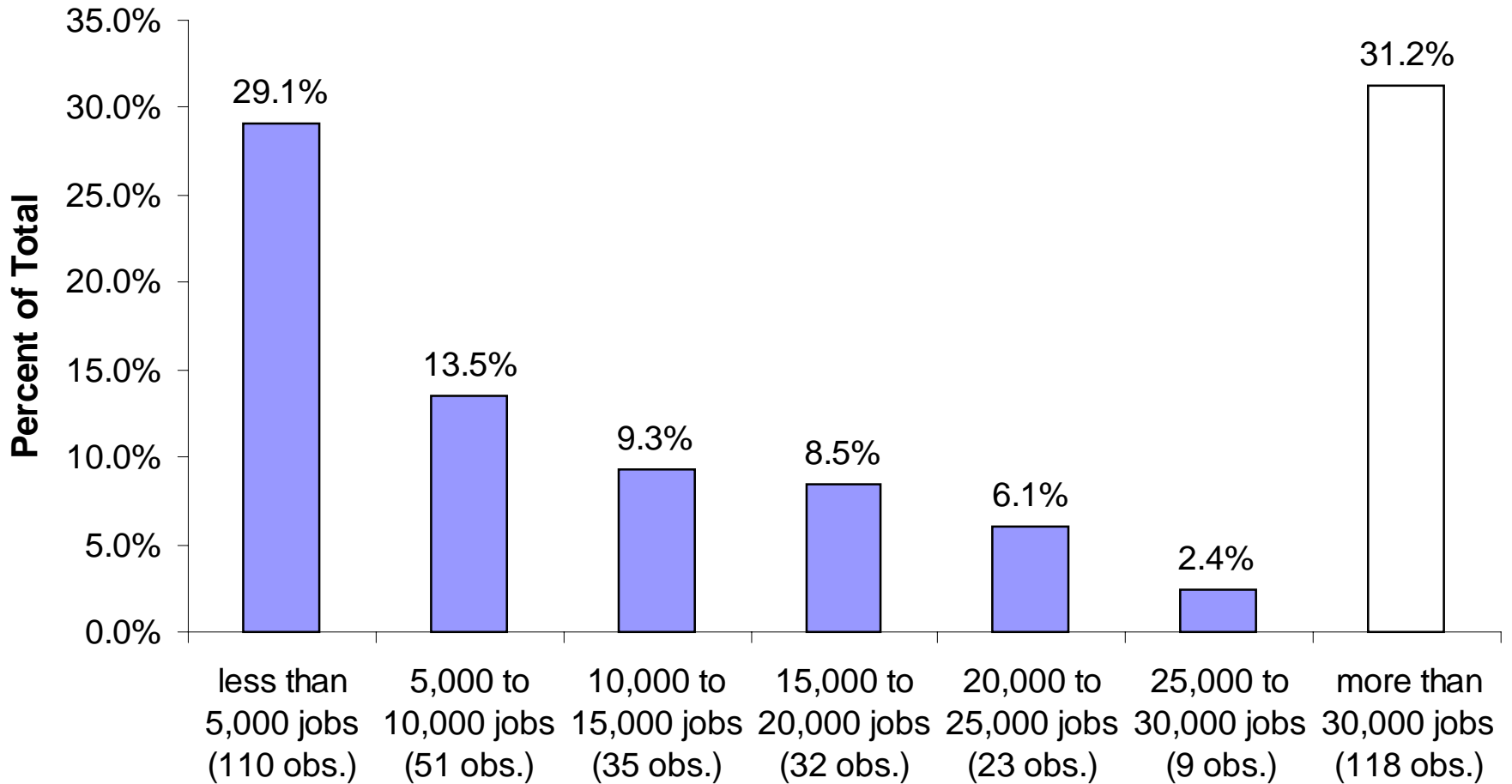
- Information on **719 clusters** from 49 countries, including 23 developing nations
- Based on 360 published and unpublished cluster-oriented books, reports, and articles
- A total of **21,787 observations** of which 12,585 can be evaluated quantitatively



- This is work in progress and findings are preliminary. We plan to expand the sample in the future.

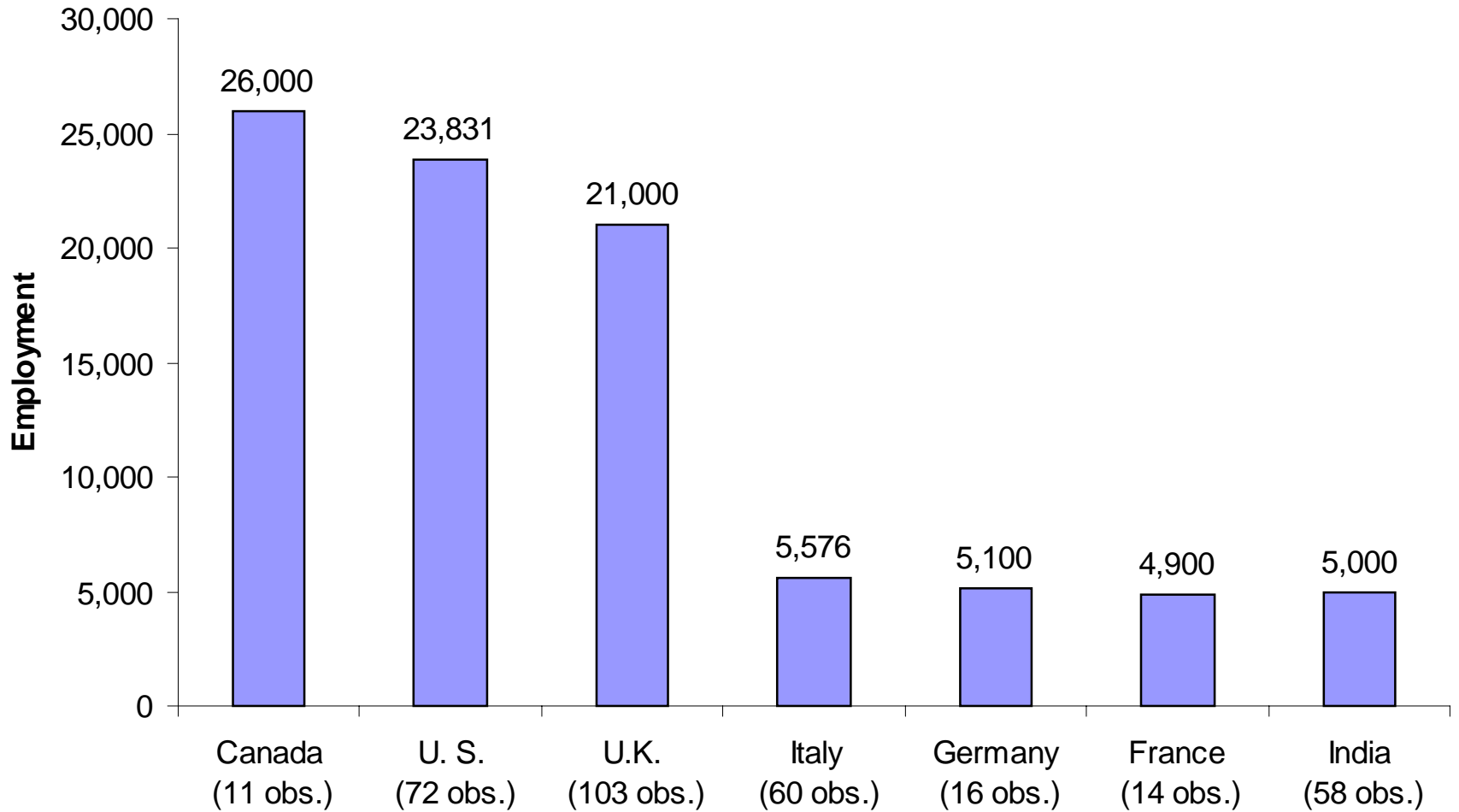
Cluster Size

Employment in Cluster or Core Industry

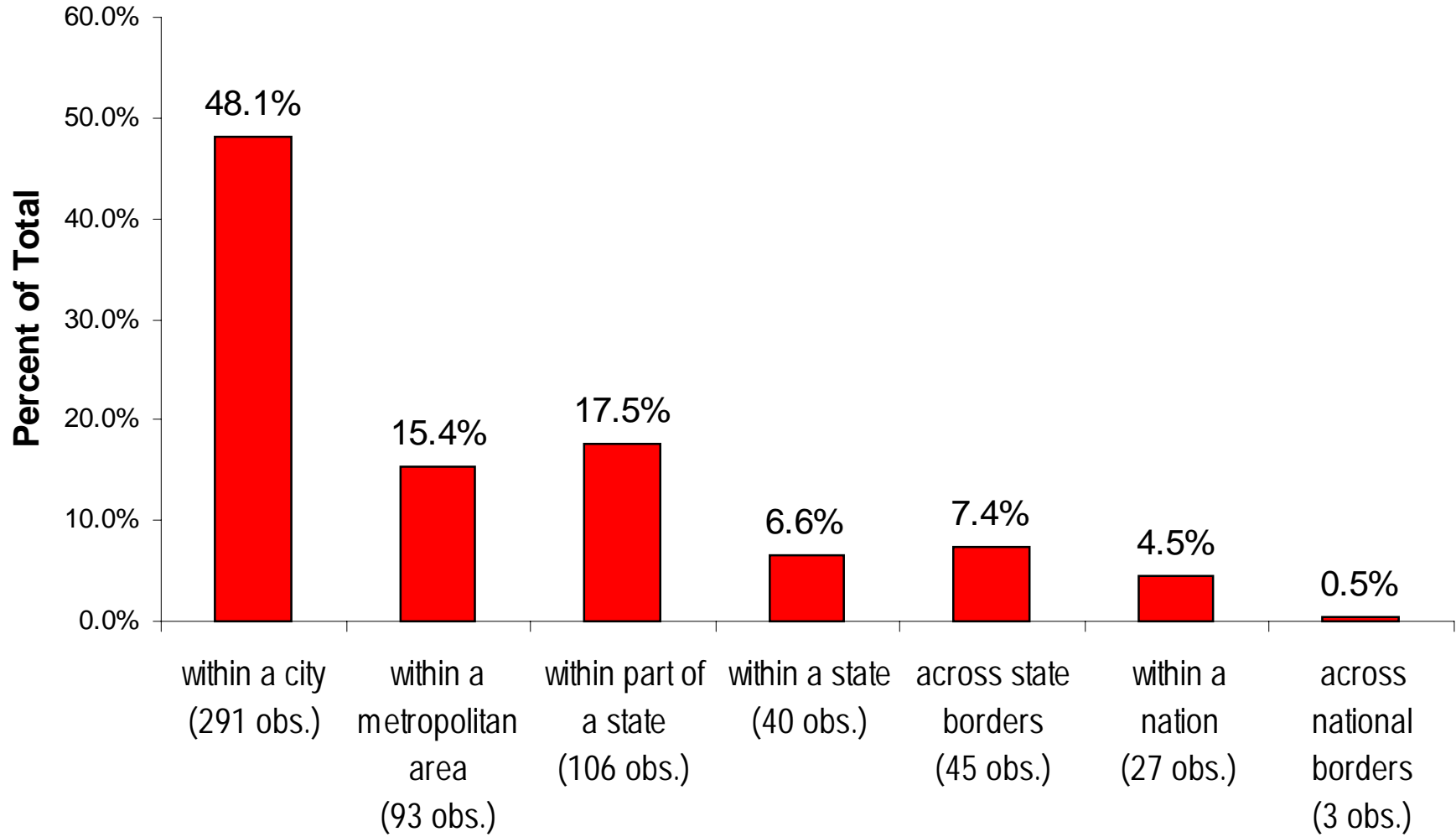


Cluster Size

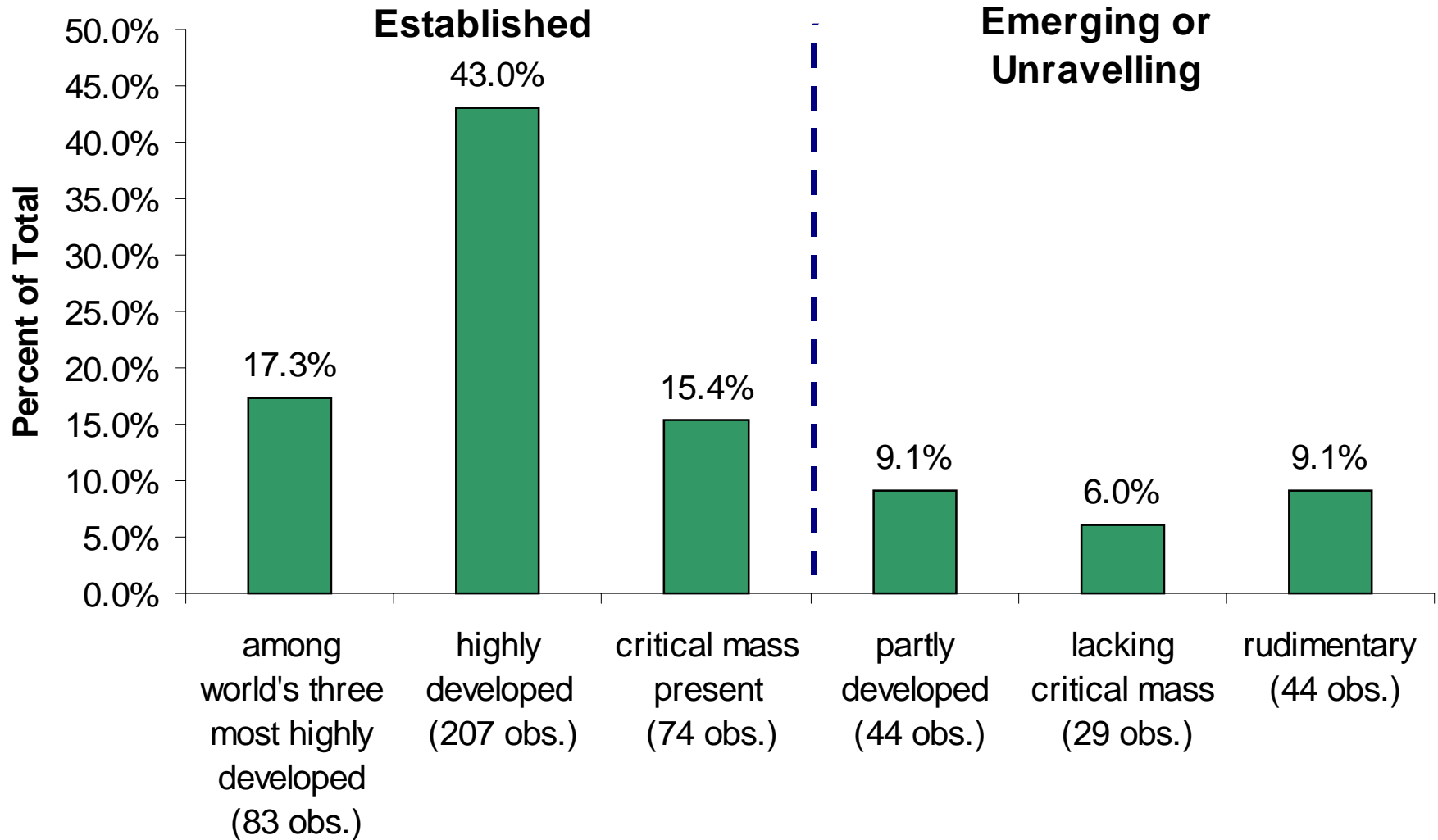
Median Employment by Country



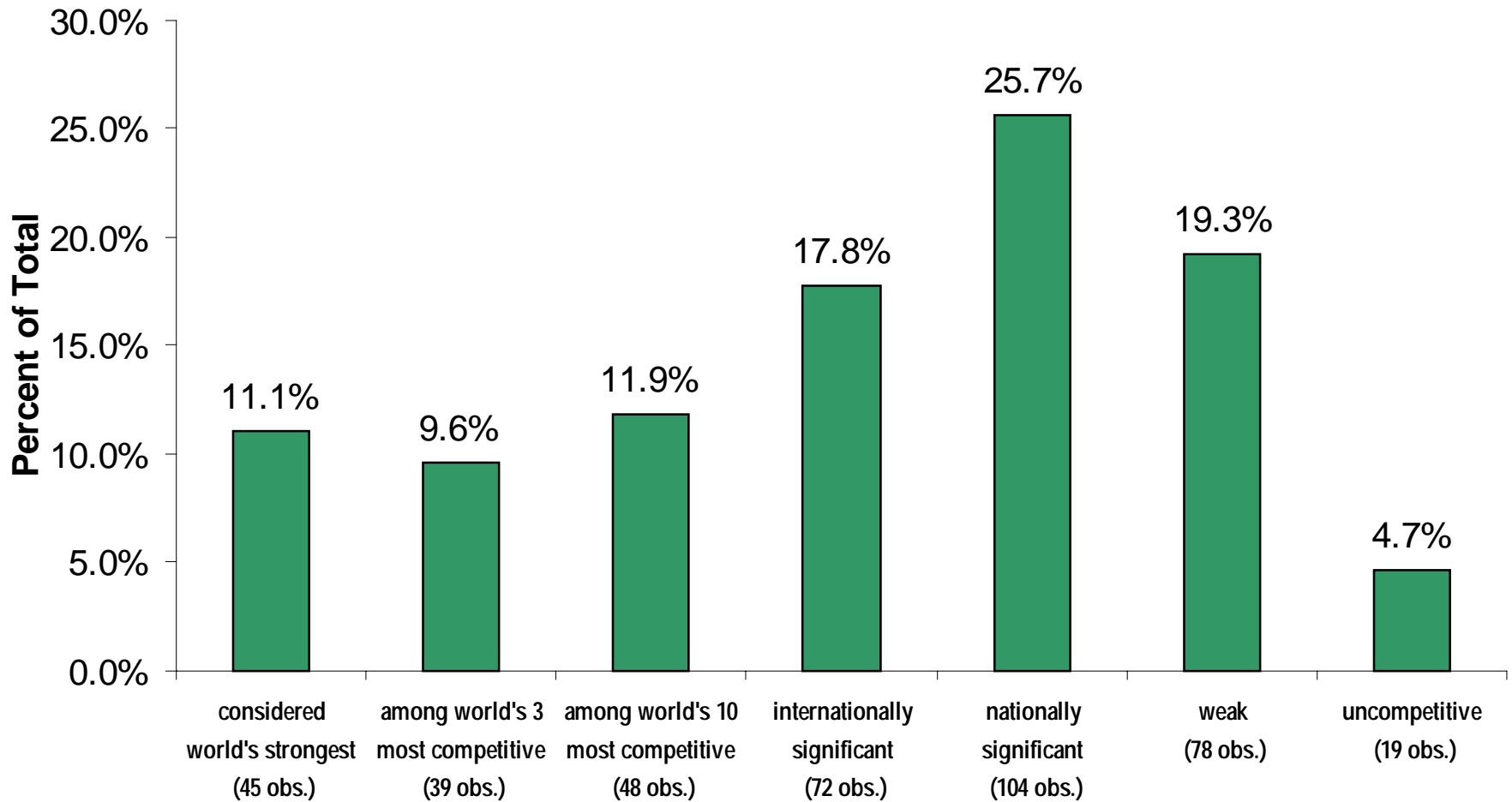
Cluster Boundaries



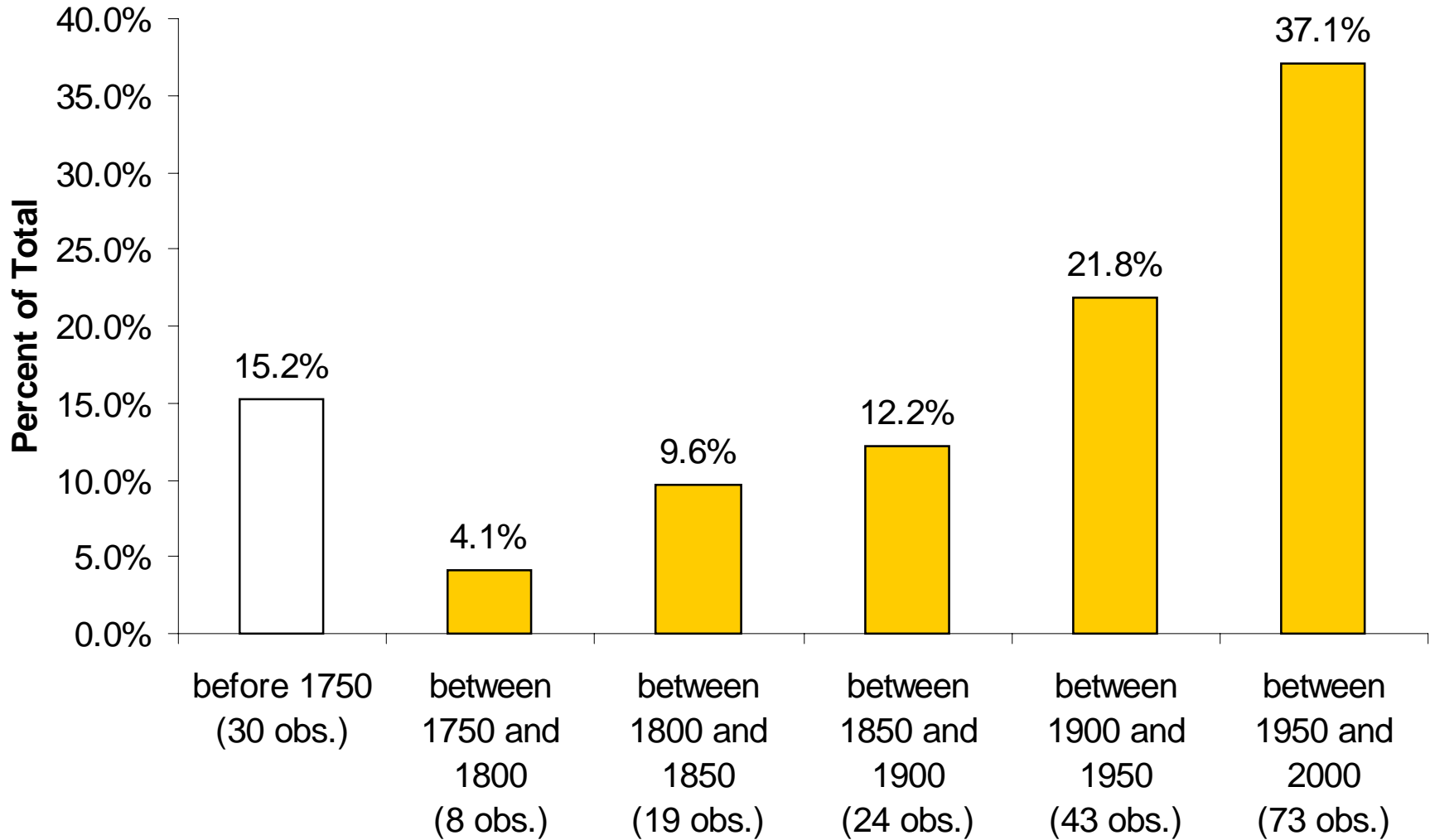
State of Cluster Development Compared to Competing Clusters



Cluster Competitiveness Compared to Competing Clusters

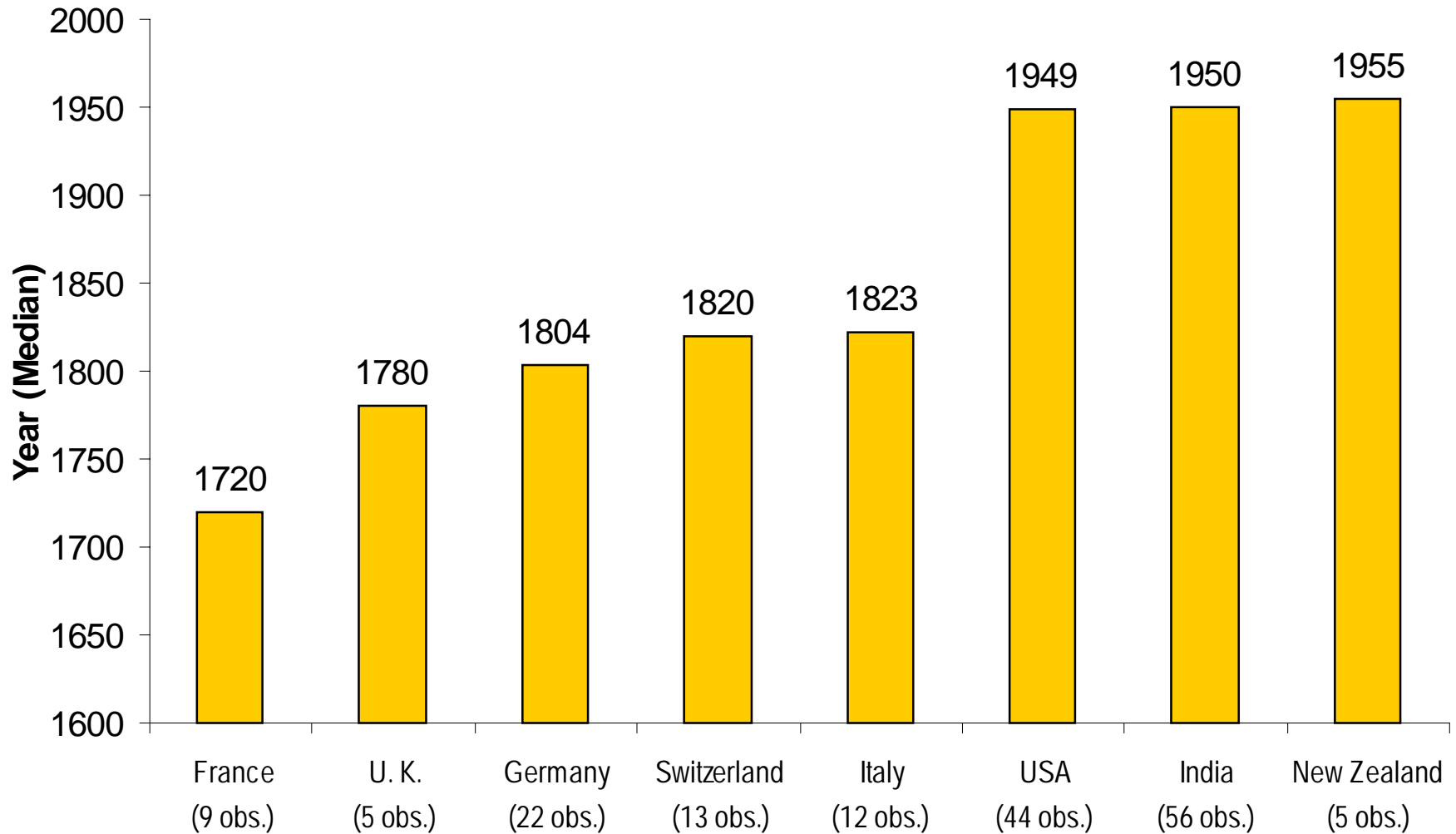


Cluster Age

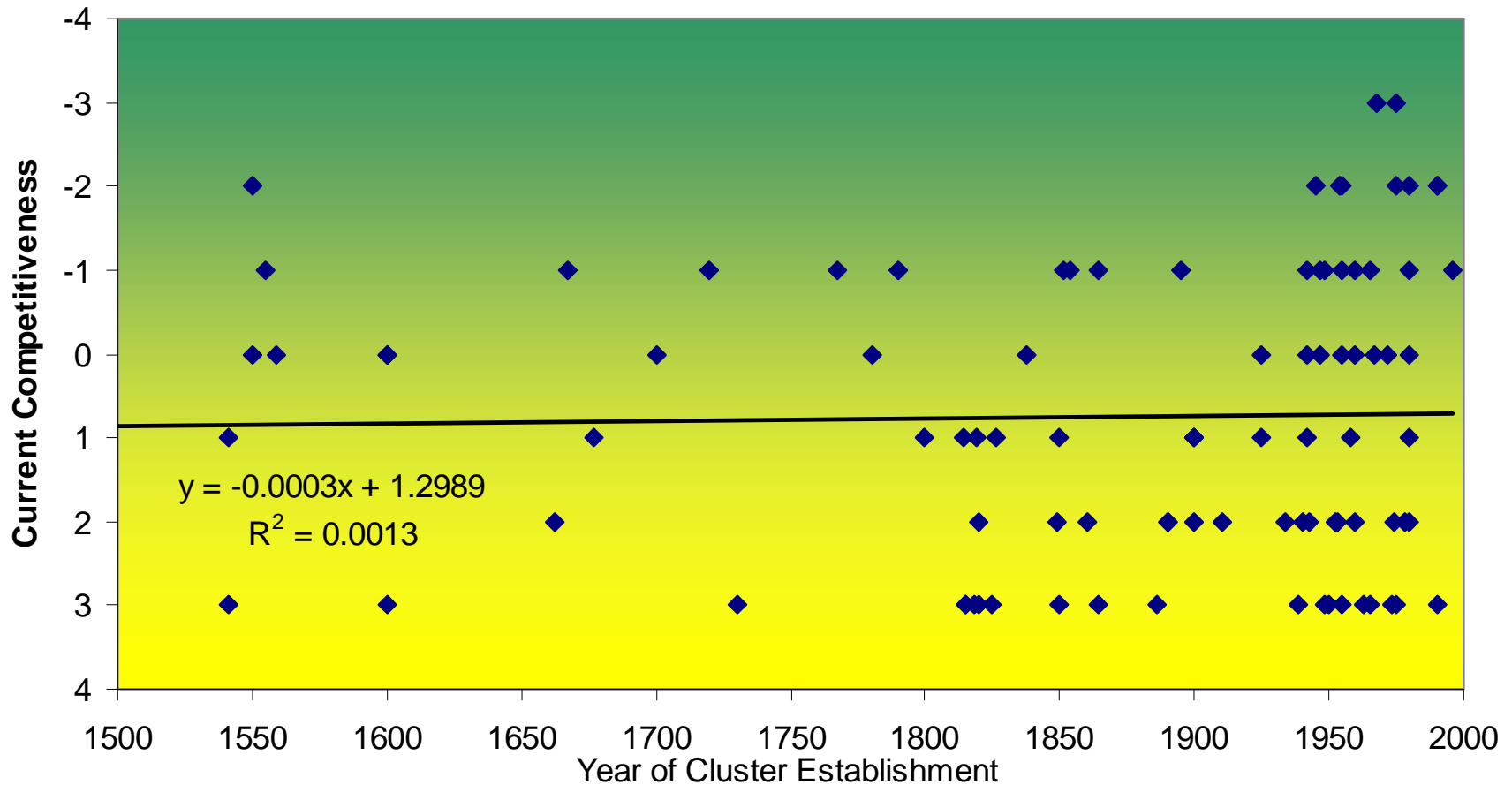


Cluster Age

Median Year of Cluster Establishment by Country

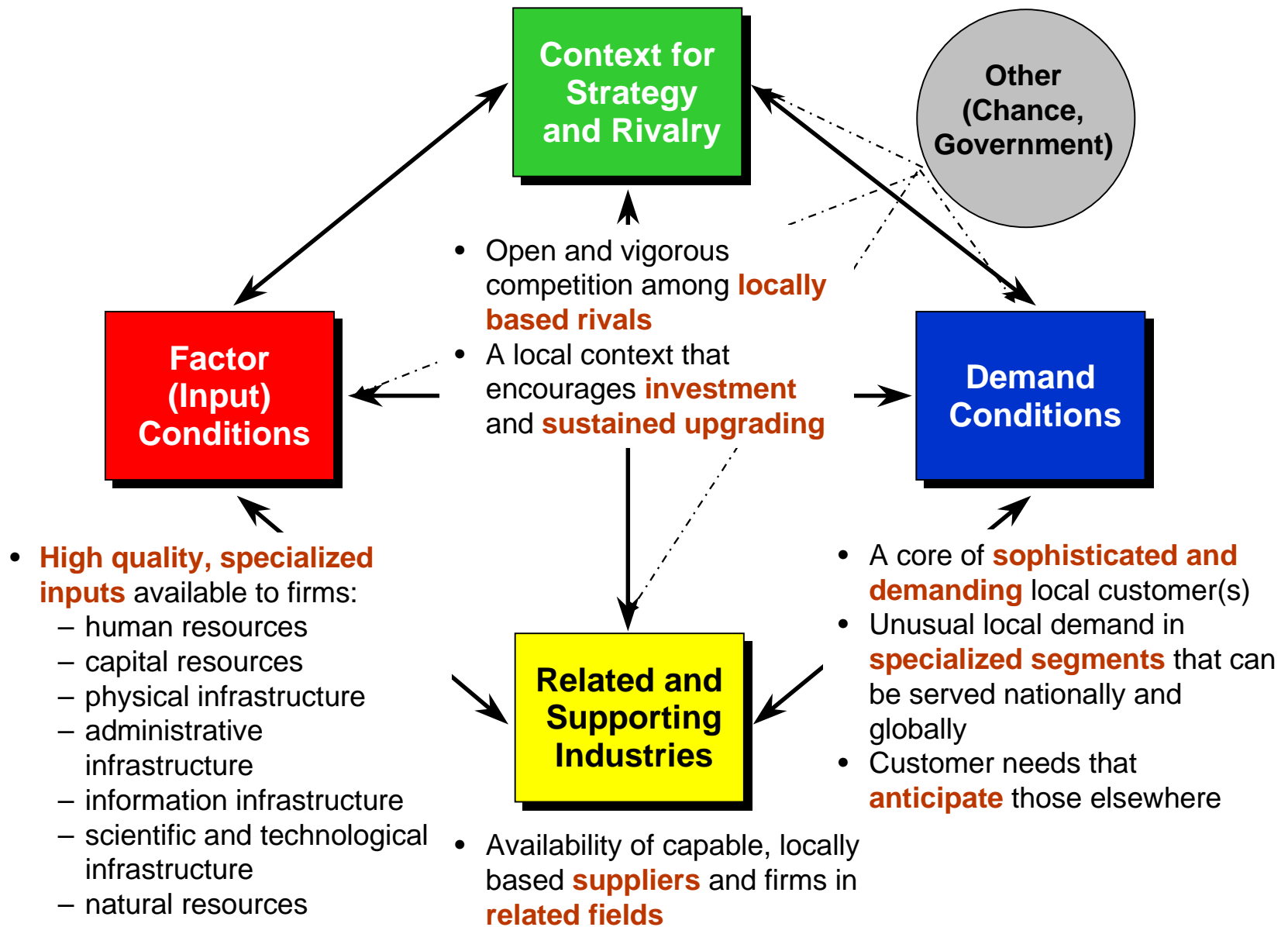


Competitiveness and Cluster Age

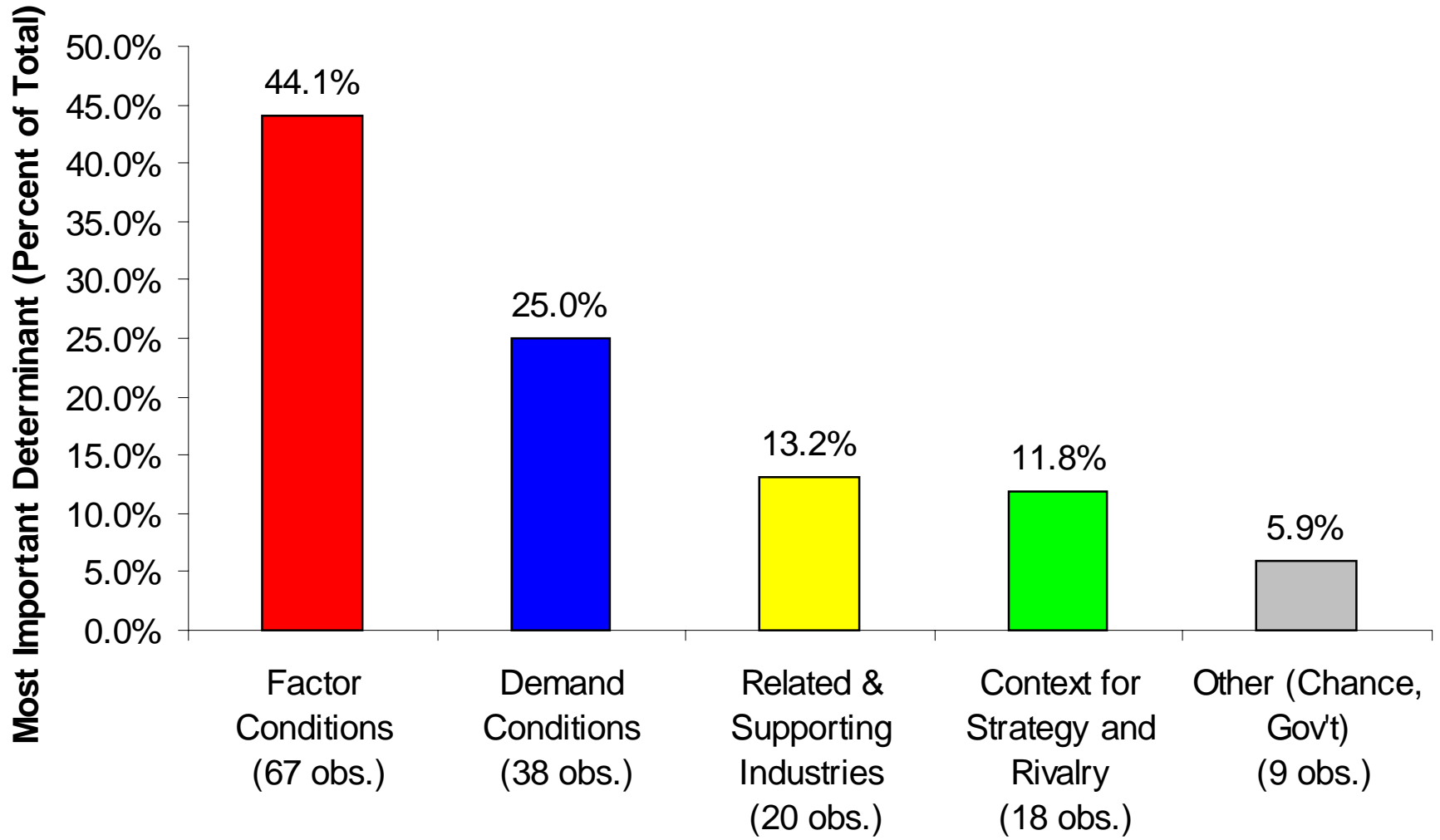


No significant relationship between a cluster's age and its competitiveness!

Determinants of Cluster Competitiveness

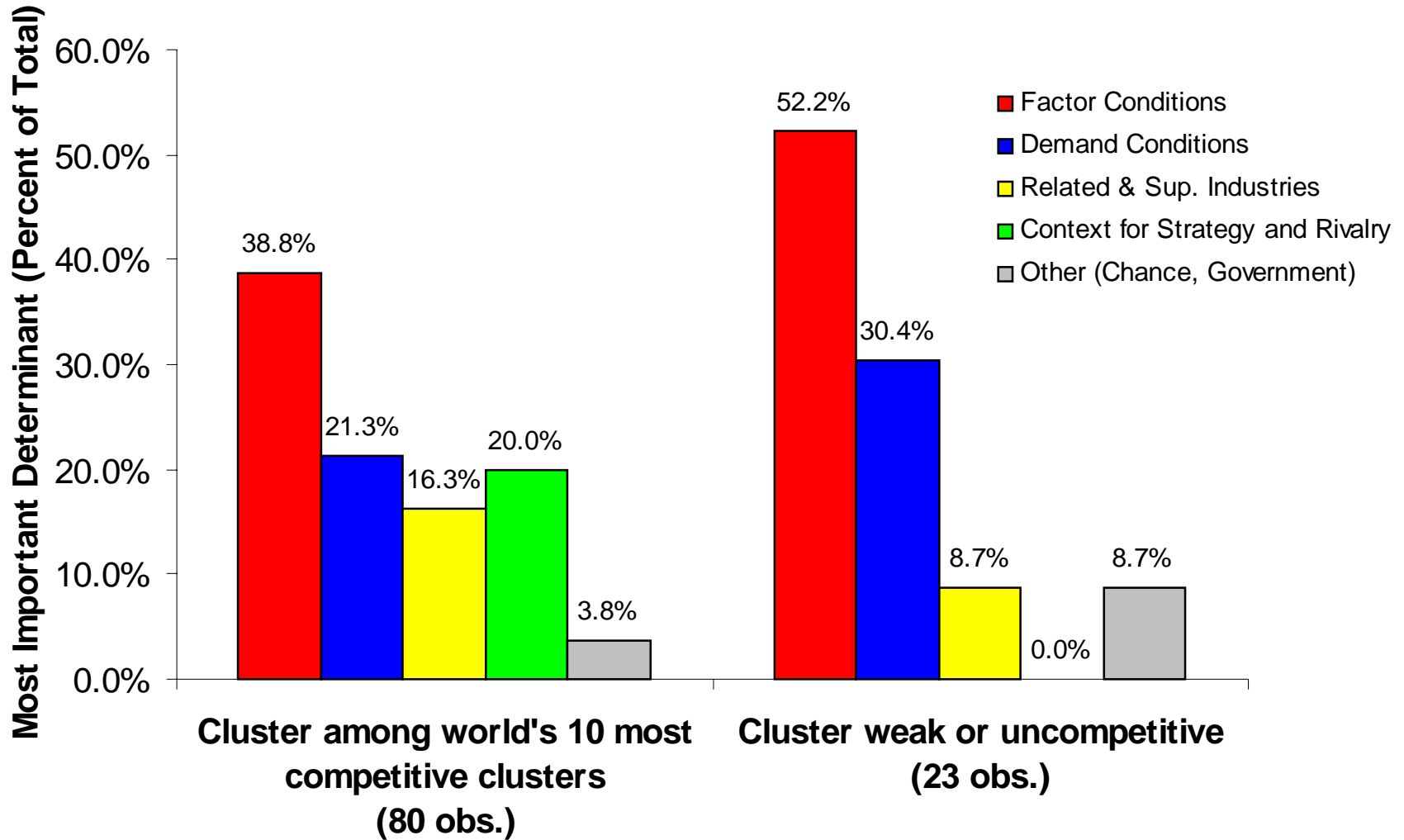


Dominant Basis of Current Cluster Competitiveness



Dominant Basis of Current Cluster Competitiveness

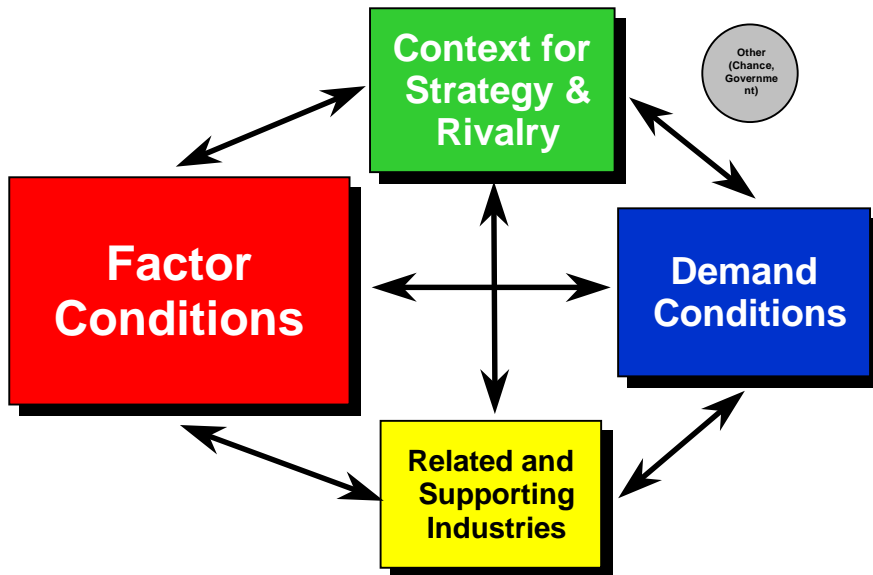
Competitive versus Uncompetitive Clusters



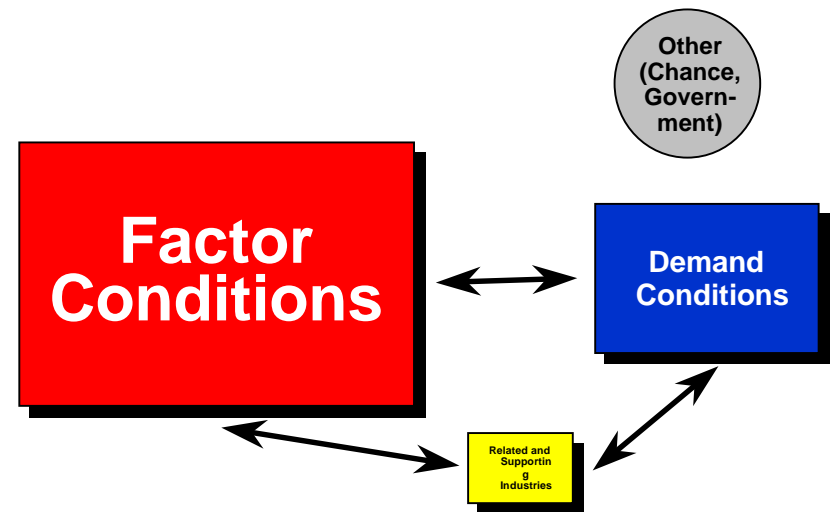
Dominant Basis of Current Cluster Competitiveness

Summary: Competitive versus Uncompetitive Clusters

Competitive Clusters



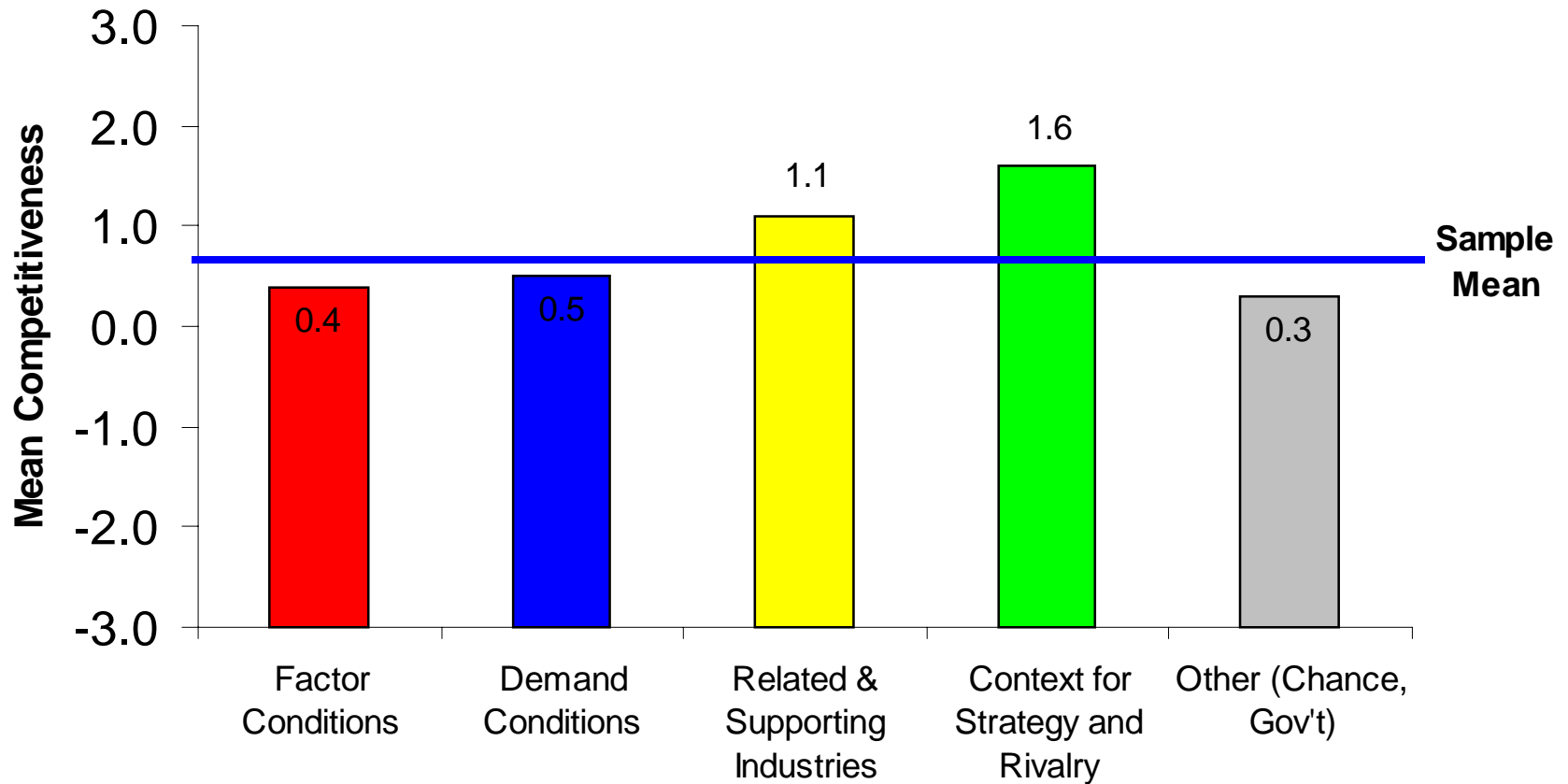
Uncompetitive Clusters



Competitive clusters may rely on any part of the full diamond, uncompetitive clusters usually only on factor conditions!

Dominant Basis of Current Cluster Competitiveness

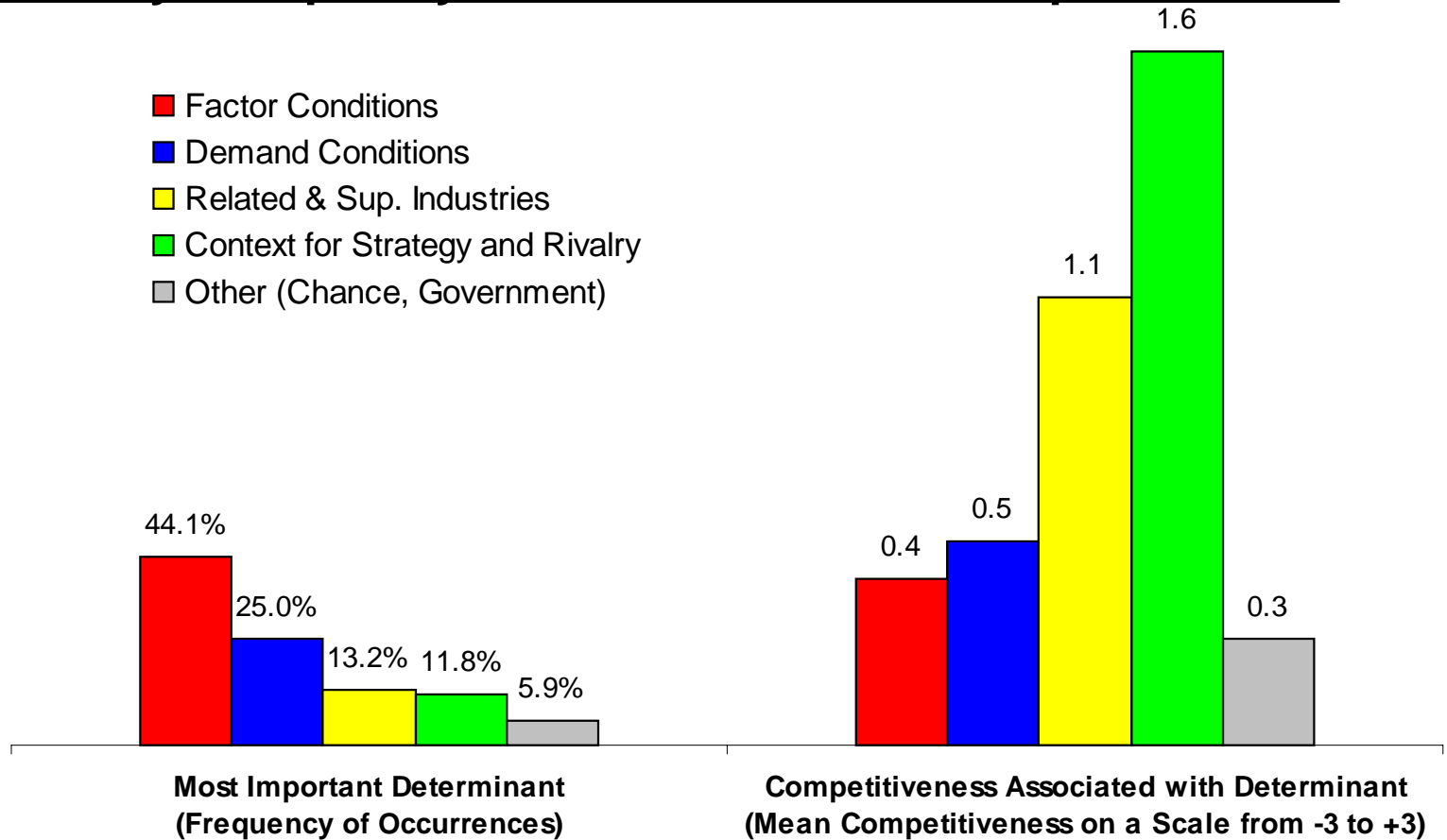
Competitiveness versus Dominant Determinant



Clusters which relied primarily on rivalry were significantly more competitive than clusters which relied predominantly on factor conditions!

Dominant Basis of Current Cluster Competitiveness

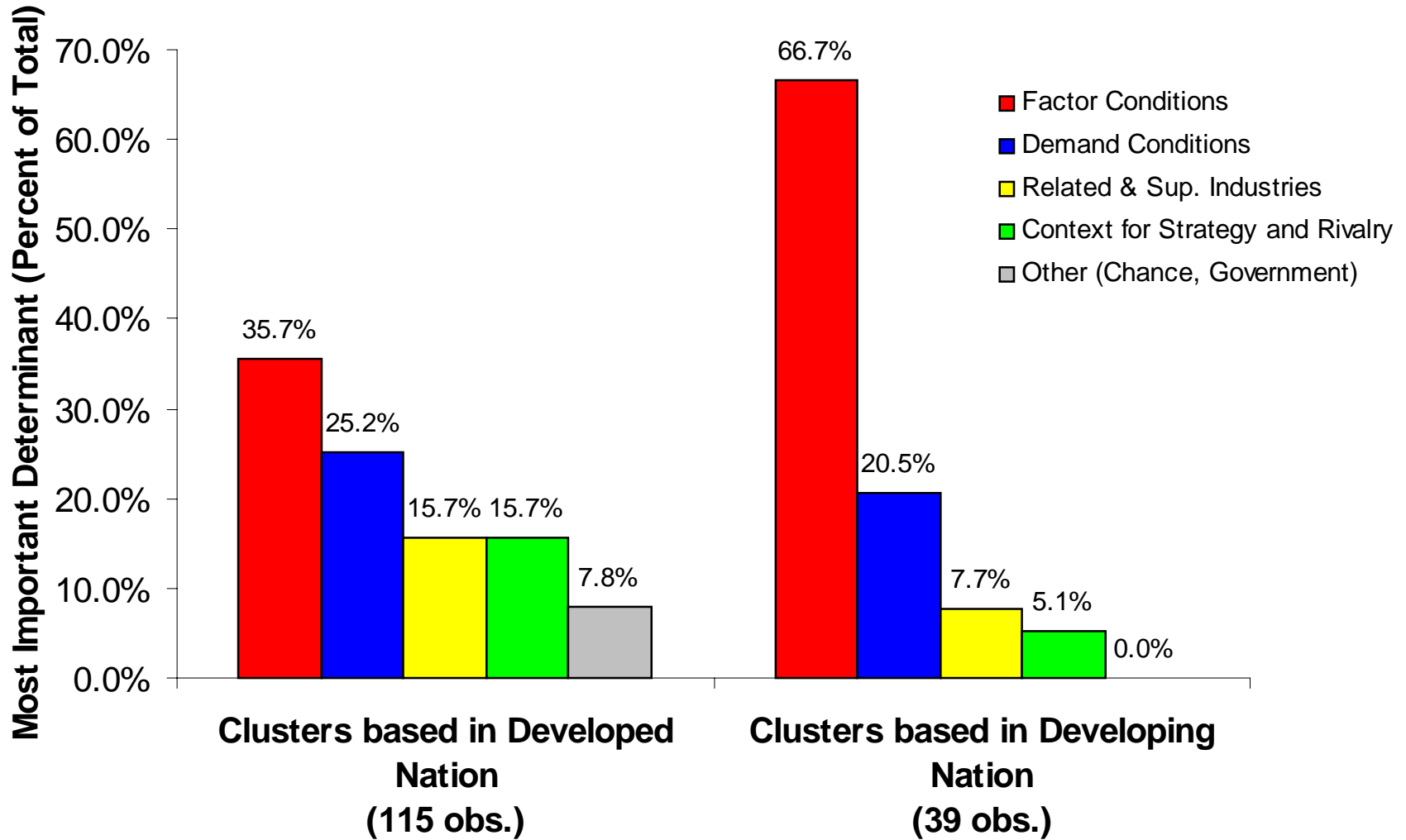
Summary: Frequency versus Associated Competitiveness



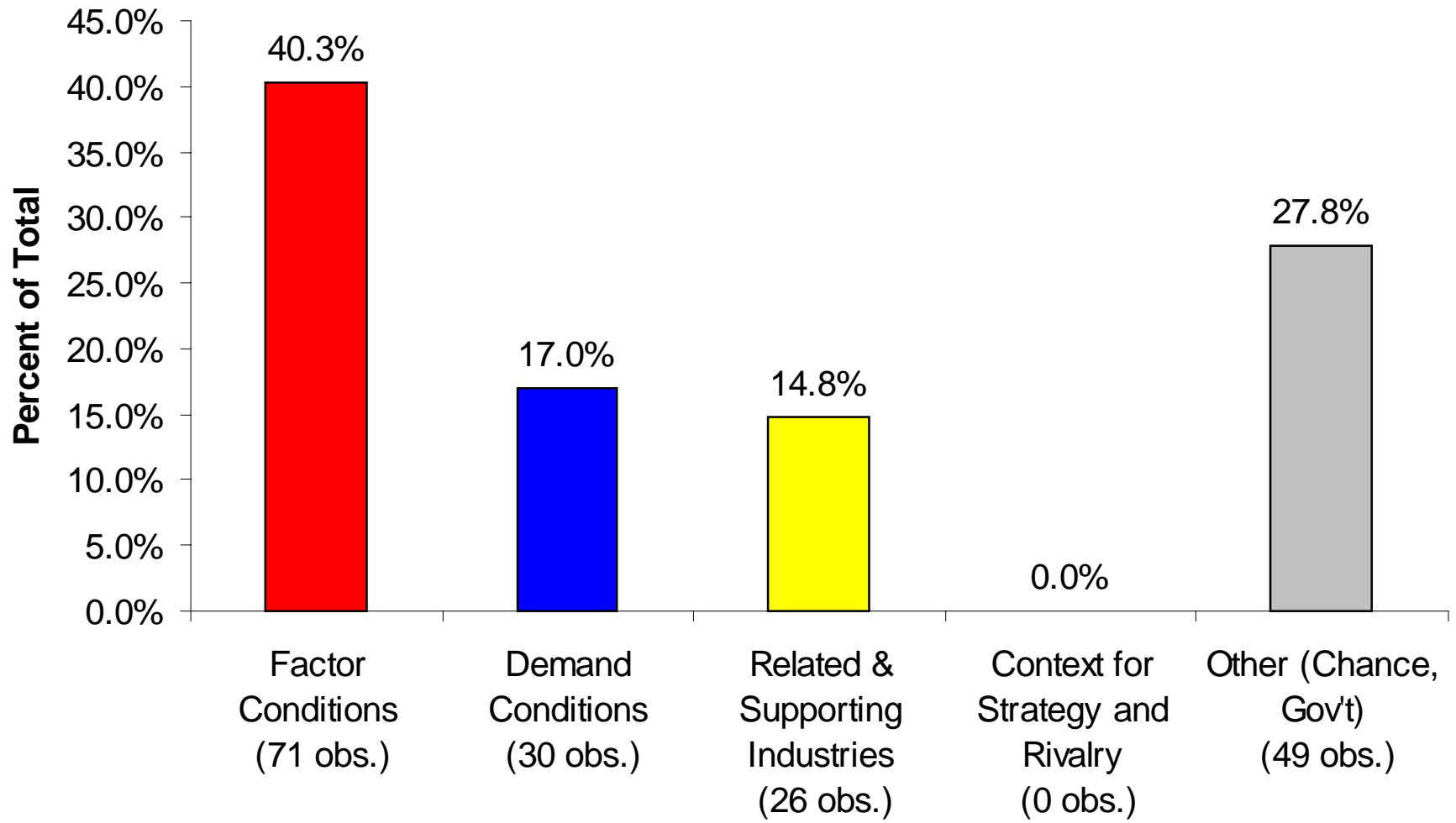
Clusters rely most often on factor conditions, but those which rely primarily on rivalry are significantly more competitive!

Dominant Basis of Current Cluster Competitiveness

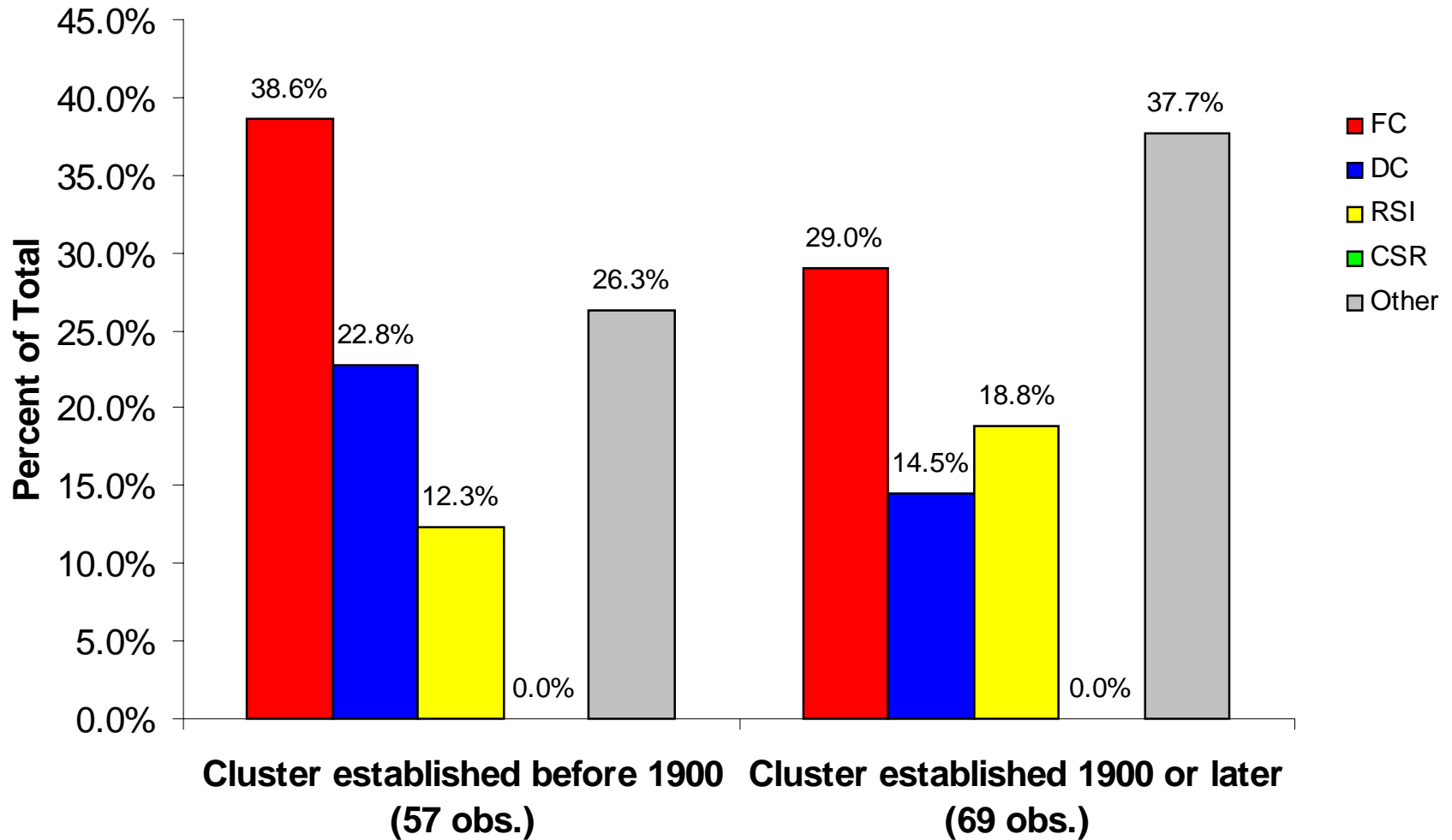
Developed versus Developing Nations



Most Important Reasons for Cluster Establishment



Most Important Reasons for Cluster Establishment Relative to Cluster Age



Implications

- To identify potential clusters in developed countries:
 - focus on **linkages** to existing related industries
 - in addition to local **factor** and **demand** conditions
- To identify potential clusters in developing countries:
 - focus on favorable local **factor** conditions
 - focus on local **needs**
- To upgrade existing clusters:
 - focus on **advanced** factors
 - focus on demand **qualities**
 - do not ignore **rivalry**
- Have **patience!**
- Think **small!**